



Assam Bio Refinery Private Limited

CIN : U74999AS2018PTC018547

Ref.: ABRPL/EHS/2022/12/01

Date: 23rd December, 2022

To,
The Inspector General of Forests (C)
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office,
4th Floor, HOUSEFED Building,
G.S.Road, Rukminigaon,
Guwahati -781022

Sub: **Submission of Half Yearly Compliance report on Environment Stipulation of EC during the period April' 2022 to September' 2022 for Bio Refinery (Bamboo based Ethanol Project).**

Ref. No: 1) F. No. J-11011/274/2015-IA II (I) dated 19th November, 2019
2) F. No. J-11011/274/2015-IA II (I) dated 05th January, 2021

Dear Sir,

Kindly find enclosed herewith the point wise Half Yearly Compliance Status for the period April' 2022 to September' 2022, pertaining to the conditions of EC for Bio Refinery (Bamboo based Ethanol Project), ABRPL vide letter No F.No.J- 11011/274/2015-IA II (I) dated 19 Nov, 2019 from MoEF& CC.

Thanking You,

Yours faithfully

Sidhartha Sankar Kowndilya
Assistant Manager-EHS,
Assam Bio Refinery Private Limited.

Encl.: 1. Six monthly compliance status of EC conditions.
2. Results of monitored data.
3. Detailed proposed ESC spending.

C.C.to:

1. **Central Pollution Control Board Regional Directorate Shillong:** "Tum-Sir". Lower Motinagar, Near Fire Brigade H.Q., Shillong 793014
2. **Assam State Pollution Control Board:** Pollution Control Board Assam, Bamunimaidam, Guwahati - 21
3. **Golaghat Regional Pollution Control Board:** Pollution Control Board, Assam College Tinali, Near Circut House, Golaghat, PIN: 785621.

S.No	Special Conditions	Remarks as on date status
10 (a)	The final product shall be used only as a bio-fuel and not at all for human consumption	Noted the final product bio-fuel shall be used for blending with petrol.
10 (b)	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	The Consent to Establish (CTE) was received from ASPCB dated 25 Jan 2019.
10 (c)	As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged.	Currently the project is under construction phase and hence no liquid waste is being generated. Noted for Compliance.
10 (d)	Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016, Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in the Rules shall be strictly adhered to.	Currently the project is under construction phase. Noted for Compliance.
10 (e)	National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608 (E) dated 21st July, 2010 and amended from time to time shall be followed.	Currently the project is under construction phase. Noted for Compliance.
10 (f)	To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Currently the project is under construction phase. Noted for Compliance.
10 (g)	<p>Solvent management shall be carried out as follows:</p> <ol style="list-style-type: none"> Reactor shall be connected to chilled brine condenser system. Reactor and solvent handling pump shall have mechanical seals to prevent leakage. The condenser shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery. Solvents shall be stored in a separate space specified with all safety measures. Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done. Entire plant shall be flame proof. The solvent storage tanks shall be provided with breath valve to prevent losses. All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation. 	Currently the project is under construction phase. Noted for Compliance.

10 (h)	Total fresh water requirement shall not exceed 2224 cum/day. Prior permission shall be obtained in this regard from the concerned regulatory authority.	NOC obtained for ground water abstraction. NOC No: CGWA/NOC/IND/ORIG/2022/14641
10 (i)	Process effluent/any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Currently the project is under construction phase. Noted for Compliance.
10 (j)	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys, etc. Flame arrester shall be provided on tank farm and the solvent transfer through pumps.	Currently the project is under construction phase. Noted for Compliance.
10 (k)	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed of to the TSDF.	Currently the project is under construction phase. Noted for Compliance.
10 (l)	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle ACT (MVA), 1989.	Currently the project is under construction phase. Noted for Compliance.
10 (m)	Fly ash should be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust should be avoided.	Currently the project is under construction phase. Noted for Compliance.
10 (n)	<p>The company shall undertake waste minimization measures as below:</p> <ul style="list-style-type: none"> i. Metering and control of quantities of active ingredients to minimize waste. ii. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. iii. Use of automated filling to minimize spillage. iv. Use of Close Feed System into batch reactors. v. Venting equipment through vapor recovery system. vi. Use of high pressure hoses for equipment clearing to reduce wastewater generation. 	Currently the project is under construction phase. Noted for Compliance.
10 (o)	The green belt of at least 10m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. As many as 25000 trees to be planted per year during first five years. Selection of Plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.	Currently the project is under construction phase. Noted for Compliance.

10 (p)	All the commitment made regarding issues raised during the Public Hearing/Consultation meeting held on 15 July, 2017 shall be satisfactory implemented.	Being Complied.
10 (q)	At least 2.5% of the total project cost shall be allocated for Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry Regional Office. (Original EC condition dated 6 th November 2017 At least 0.5% of the Project Cost shall be allocated for addressing issues raised during the Public hearing and 2% for sustainable babmoo feedstock value chain. Item-wise details along with time bound action plan shall be prepared and submitted to the Ministry Regional Office. (Amended EC condition dated 5 th January 2021)	Being Complied. Copy of detailed proposed ESC spending attached.
10 (r)	For the DG sets, emission limits and the stack height shall be in conformity with the extent regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	The project is under construction. There is no usage of DG sets for construction power. The required power is being supplied by NRL.
10 (s)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefightingsystemshall be as per the norms.	Currently the project is under construction phase and fire fighting systems are being installed as per requirement at offices, porta-cabins and rest sheds. Noted for Compliance.
10 (t)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	The project is under construction. The Occupational health surveillance of the workers is undertaken as per BOCW norms.
10 (u)	Continuous online (24x7) monitoring system for stack emission shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.	Currently the project is under construction phase. Noted for Compliance.
S.NO	General Conditions	Remarks as on date status
10 (i)	The project authorities must strictly adhere to the stipulations made by the State pollution Control Board (SPCB) State Government and/or any other statutory authority.	Being Complied.

10 (ii)	No further expansion or modification in the project shall be carried out without prior approval from the Ministry. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance a, fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environment protection measures required if any.	Noted for Compliance.
10 (iii)	The locations of ambient air quality monitoring stations shall be decided in consultation with the SPCB and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentration are anticipated.	Currently the project is under construction phase. Noted for Compliance, post commissioning.
10 (iv)	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826 (E) date 16th November, 2009 shall be complied with.	Being complied. Report attached.
10 (v)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under PARA Rules,1989 viz. 75 dBA(day time) and 70 dBA (night time).	Currently the project is under construction phase. Noted for Compliance.
10 (vi)	The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.	Currently the project is under construction phase. Noted for Compliance.
10 (vii)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Noted for compliance. Pre-employment and routine periodical medical examinations for all employees is being complied as per BOCW norms.
10 (viii)	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing shall be implemented.	Noted for Compliance.
10 (ix)	The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.	Noted for Compliance.
10 (x)	A separate Environmental Management Cell equipped with full-fledged laboratory facilities must be setup to carry out the environmental management on monitoring	Currently the project is under construction phase. Noted for Compliance.

	functions.	
10 (xi)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	Noted for Compliance.
10 (xii)	A copy of clearance letter shall be sent by the proponent to concerned Panchayat/Zila Parishad/Municipal Corporation/Urban Local Body and the local NGO if any, from whom suggestion/representation if, any, were received while processing the proposal.	Complied.
10 (xiii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental Clearance and six Monthly compliance status report shall be posted on the website of the company.	Being Complied. Six monthly report on status of compliance of the stipulated environmental conditions including the results of monitored data report submitted to MoEF&CC, the respective Zonal office of CPCB and SPCB and posted in company website.
10 (xiv)	The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986. As amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail.	Being Complied.
10 (xv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locally concerned and a copy of the same shall be forwarded to the Regional Office of the Ministry.	Being Complied. Public notice was published on 18.11.2017 in DainikJanambhumi , Pratidin, Assam Tribune and Sentinel. Copy of the notice published sent to MoEF RO on 29.11.2017

Report No.: ENV/ABRPL/EM/22-23/AA-01

Date : 23/09/2022

Report Issued To : **ASSAM BIO REFINERY PRIVATE LIMITED**
Numaligarh, Dist. – Golaghat (Assam)

AMBIENT AIR QUALITY TEST RESULTS

Sl. No.	LOCATION(S) ↓	Date of Sampling	PM 2.5 ($\mu\text{g}/\text{m}^3$)	PM 10 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)
	LIMIT(S) →	---	60	100	80	80
01	East Side: Near Seuj Dwar	13.09.2022	26	57	6.5	8.3
02	West Side: Near Acid-Alkali Neutralisation Pit	13.09.2022	22	49	5.8	6.9
03	North Side: Near Rajabari Village	13.09.2022	17	42	BDL	BDL

Analysis Protocol: IS 5182

BDL: Below Detectable Limit



Checked By: Mr. Bivash Mahanta, **ENVIROCON**

NOTE:

- Results reported are valid at the time of and under the prevailing conditions of measurement.
- Results refer only to the particular parameters tested.
- This test report shall not be reproduced except in full, without the written permission of ENVIROCON, I.O.C.L (AOD) New Market, Digboi – 786171, Assam.

Core Services: Environmental Monitoring & Data Generation, EIA & EMP, Environmental Audit & Allied Environmental Management jobs
Associate Services: Certification by Competent Person (CIF), NDT, Hydraulic Testing, Chartered Engineer Services etc.

Report No.: ENV/ABRPL/EM/22-23/N-01

Date : 23/09/2022

Report Issued To : **ASSAM BIO REFINERY PRIVATE LIMITED**
Numaligarh, Dist. – Golaghat (Assam)

NOISE LEVEL MEASUREMENT RESULTS

Sl. No.	Location(s)	Date Of Measurement	Result(s) (Day Time)		Result(s) (Night Time)	
			L _{eq} (dB-A)	Limit (dB-A)	L _{eq} (dB-A)	Limit (dB-A)
1	East Side: Near Seuj Dwar	13.09.2022	67.2	75	52.4	70
2	West Side: Near Sub - Station Building	13.09.2022	65.3	75	53.7	70
3	North Side: Near Rajabari Village	13.09.2022	44.3	75	32.5	70



Checked By: Mr. Bivash Mahanta, **ENVIROCON**

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Report No.: ENV/ABRPL/EM/22-23/GW-01

Date : 23/09/2022

Report Issued To : **ASSAM BIO REFINERY PRIVATE LIMITED**
Numaligarh, Dist. – Golaghat (Assam)

GROUND WATER ANALYSIS RESULTS

Sample Ref. No. : ABRPL/2022/GW-1409/01

Sample Source : Deep Tube Well, ABRPL

Sample Type : Ground Water

Collected On : 14-09-2022

Received On : 15-09-2022

Collected By : ENVIROCON & Client

Sl. No.	Parameters	Results	Desirable Limit (IS:10500:2012)
01	Colour, Hazen Units, Max	1	5
02	Odour	Odourless	Agreeable
03	Taste	Acceptable	Agreeable
04	Turbidity, NTU, Max	0.3	1.0
05	pH	6.63	6.5 – 8.5
06	Total Dissolved Solids, mg/l, Max	147	500
07	Aluminium (as Al), mg/l, Max	<0.01	0.03
08	Boron (as B), mg/l, Max	<0.01	0.5
09	Calcium (as Ca), mg/l, Max	32	75
10	Chloride (as Cl), mg/l, Max	6.2	250
11	Copper (as Cu), mg/l, Max	<0.001	0.05
12	Fluorides (as F), mg/l, Max	0.5	1.0
13	Free Residual Chlorine, mg/l, Min	<0.01	0.2
14	Iron (as Fe), mg/l, Max	0.26	0.3
15	Magnesium (as Mg), mg/l, Max	6	30
16	Manganese (as Mn), mg/l, Max	<0.001	0.1
17	Zinc (as Zn), mg/l, Max	<0.01	5.0
18	Nitrate (as NO ₃), mg/l, Max	5.2	45
19	Phenolic Compounds (as C ₆ H ₅ OH), mg/l, Max	<0.001	0.001
20	Sulfate (as SO ₄), mg/l, Max	80	200
21	Total Alkalinity(as CaCO ₃), mg/l, Max	52	200
22	Total Hardness, (as CaCO ₃), mg/l, Max	93	200
23	Cyanide (as CN), mg/l, Max	<0.001	0.05
24	Lead (as Pb), mg/l, Max	<0.001	0.01
25	Total Arsenic (as As), mg/l, Max	<0.001	0.01
26	Total Chromium, (as Cr), mg/l, Max	<0.001	0.05
27	E. Coli / 100 ml	Absent	Absent
28	Faecal Coliform	Absent	Absent

Analysis Protocol: IS 3025



Checked By: Mr. Bivash Mahanta, ENVIROCON

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Core Services: Environmental Monitoring & Data Generation, EIA & EMP, Environmental Audit & Allied Environmental Management jobs
Associate Services: Certification by Competent Person (CIF), NDT, Hydraulic Testing, Chartered Engineer Services etc.



Assam Bio Refinery Private Limited

CIN : U74999AS2018PTC018547

Ref: ABRPL/IRO/EHS/EC/2022

Date: 14.07.2022

To,
Head of Office
The Integrated Regional Office (IRO)
MoEF&CC, Govt. of India
Guwahati, Assam



Subject: Submission of Item wise details along with Time bound Action Plan regarding the Fund allocated under Enterprise Social Commitment under 10(q) of EC Conditions issued in favour of ABRPL.

References:

1. Copy of EC in favor of NRL dated 06th Nov 2017
2. Copy of Transfer of EC in favor of ABRPL dated 19th Nov 2019
3. Copy of EC Amendment dated 05th January 2021 on Enterprise Social Commitment

Dear Sir,

As you are already aware of, a new joint venture Company namely Assam Bio Refinery Private Limited ("ABRPL") has been formed with three promoters namely M/s Numaligarh Refinery Limited, as major promoter along with two other foreign Companies namely M/s Chempolis Oy, technology provider and a clean energy Company M/s Fortum 3 B.V. from Finland.

The main objective of this new venture by Numaligarh Refinery Limited (NRL) is to enhance the production of bio ethanol in the Country, to be blended with petrol as per Govt. of India directive and thereby to help the nation in reducing fossil fuel imports, reducing emissions. The technology being used is based on selective fractionation of biomass and co-production of multiple products. Bamboo residue shall be used as fuel to produce steam and electricity. Bamboo is potentially an interesting feedstock for advanced bioethanol production due to its natural abundance, rapid growth, perennial nature and low management requirements rather than others feedstock such as sugarcane, rice & wheat straw, corn, etc., which will result impact on food cycle. The project will also give boost to rural economy directly or indirectly and the bamboo farmers get additional income through sustainable cultivation, extraction and transportation of bamboo. The Project Construction activity at the site was started in late 2018 and is continuing in full swing.

This has in reference with the Environmental Clearance (EC) vide letter No F.No.J-11011/274/2015-IA II (I) dated 6th November 2017 and subsequent amendment therein dated 19th November, 2019 and 5th January, 2021 issued in favour of Assam Bio Refinery Private Limited (ABRPL) for Bio Refinery (Bamboo based Ethanol Project) from MoEF& CC, wherein the clause no 10(q) stated that "At least 0.5% of the project cost shall be allocated for addressing the issue raised during Public Hearing and 2% of the project cost for sustainable bamboo feedstock value chain. Item-wise details along with time bound action plan shall be prepared and submitted to the Ministry Regional Office." (Copy of Amended EC).

1/2

Accordingly, in compliance to the above clause of EC, we have prepared and allocated ESC fund under various heads/ activities along with time bound action plan and their break-up are as under:

Total Project Cost	Rs. 1750 Cr	
ESC allocated amount (2.5% of total Project cost)	Rs. 43.75 Cr.	
Head of ESC fund	ESC based on Public Hearing issues	ESC against sustainable bamboo feedstock value chain
% of fund allocation	0.5%	2.0%
Revised ESC Amount allocation	Rs. 8.75 Cr	Rs. 35 Cr

The Item-wise detailed along with Time Bound Action Plan under ESC spending for 0.5% and 2.0% of the Project cost are enclosed separately at Annexure I & Annexure II respectively, for your review and consideration..

We request your good office to kindly consider the above allocation of ESC fund under various item along with details action plan and give your concurrence so that we will able to meet our project objectives on time. We are also thankful for your generous visit to our project site on 31.03.2022 and giving us an opportunity to interact about the project.

Thanking you

Yours faithfully,
For and on behalf of Assam Bio Refinery Private Limited

(Anup Kr. Baruah)
Chief Executive Officer

Enclosures:

1. Annexure I – Detailed proposed ESC spending of 0.5% of project cost against public hearing issues.
2. Annexure II – Indicative ESC spending of 2.0% of project cost against sustainable bamboo feedstock value chain.
3. Copy of EC in favor of NRL dated 06th Nov 2017
4. Copy of Transfer of EC in favor of ABRPL dated 19th Nov 2019
5. Copy of EC Amendment dated 05th January 2021 on Enterprise Social Commitment

Annexure I

Detailed proposed ESC spending of 0.5% (Rs. 8.75 Cr.) of project cost against public hearing issues

Sl. No.	Issues	Plan of Action	Category	Estimated Budget	Yearwise Proposed Allocation						Total Spent (till 3rd Year)	Balance to spent	Current Status	Remarks
					1st Year (2019)	2nd Year (2020)	3rd Year (2021)	4th Year (2022)	5th Year (2023)	Total				
1	Save water, save energy	Initiate awareness program	Community development	120000				60000	60000	120000	0	120000	Not initiated	6 session per year @ Rs. 10000 per session
2	Involving local groups for social work	In all activities	Community development	200000					200000	200000	0	200000	Not initiated	
3	Community Initiatives Cell (CIC)	Local community	Community development	500000				250000	250000	500000	0	500000	Not initiated	
4	Safety drinking water	installing HPs and Public Taps	Community Healthcare	5200000				2600000	2600000	5200000	0	5200000	Not initiated	
5	First aid training	Conducting First aid trainings	Community Healthcare	300000				150000	150000	300000	0	300000	Not initiated	5 session per year @ 30000 per session from St John ambulance
6	COVID aids	Supply of food items, sanitisation, distribution of PPEs	Community Healthcare	2524883		124883	1700000	500000	200000	2524883	1824883	700000	Initiated	
7	Ambulance	With drivers	Community Healthcare	2000000					2000000	2000000	0	2000000	Not initiated	
8	Poor solid waste management	Segregation at source, and disposal in safe site, where there is no habitation	Environmental Welfare	2000000				1000000	1000000	2000000	0	2000000	Not initiated	

Sl. No.	Issues	Plan of Action	Category	Estimated Budget	Yearwise Proposed Allocation						Total Spent (till 3rd Year)	Balance to spent	Current Status	Remarks
					1st Year (2019)	2nd Year (2020)	3rd Year (2021)	4th Year (2022)	5th Year (2023)	Total				
9	Pollution	Installing electronic boards indicating pollution level at important locations	Environmental Welfare	15000000					15000000	15000000	0	15000000	Not initiated	
10	Fuel wood used for cooking	Substitution by solar cookers or small gas cylinders	Environmental Welfare	400000				200000	200000	400000	0	400000	Not initiated	
11	Blockage of elephant corridor	Upgrading elephant corridor	Environmental Welfare	500000				250000	250000	500000	0	500000	Not initiated	
12	Plantation at household level and in public places	Saplings and its maintenance	Environmental Welfare	1000000				500000	500000	1000000	0	1000000	Not initiated	
13	Management of solid waste	Tricycle and persons for mangement	Environmental Welfare	2500000				1250000	1250000	2500000	0	2500000	Not initiated	
14	Disaster management (Flood, land slide, any other)	In case of need	Disaster Management	3000000				2000000	1000000	3000000	0	3000000	Not initiated	
15	Poor electric supply	Installation new and repairing of non-functional solar	Infrastructure development	30000000							0	30000000	Not initiated	
16	Poor condition of roads in villages	Community involvement in roads construction and maintenance	Infrastructure development					15000000	15000000	30000000	0	0	Initiated	
17	Construction of rain water Harvesting	Rainwater harvesting structures in nearby villages in premises	Infrastructure development								0	0	Not initiated	

Yearwise Proposed Allocation																	
Sl. No.	Issues	Plan of Action	Category	Estimated Budget	1st Year (2019)	2nd Year (2020)	3rd Year (2021)	4th Year (2022)	5th Year (2023)	Total	Total Spent(till 3rd Year)	Balance to spent	Current Status	Remarks			
18	Construction of drainage facilities	500 meter	Infrastructure development								0	0	Initiated				
19	Construction of rain waterharvesting structures	Household rain water harvesting	Infrastructure development								0	0	Not initiated				
20	Housing	Housing for poor	Infrastructure development								0	0	Not initiated				
21	Infrastructure for educational institute	10 to 20 units	Infrastructure development								0	0	Not initiated				
22	Program for vulnerable people	Provision of local employment, aid and equipments, setting up of self help groups, skill enhancement	Livelihood Generation		1500000							1500000	1500000	0	1500000	Not initiated	
23	Self Help Groups (SHGs)	Self Help Groups (SHGs) units in villages	Livelihood Generation		500000							500000	500000	0	500000	Not initiated	
24	Education, especially of girls	Initiation of self help groups	Livelihood Generation	500000					500000	500000	0	500000	Not initiated				
25	Recreation	Developing parks/playgrounds, establishment of community centers	Promotion of arts, sports, literature and culture	2500000				1000000	1500000	2500000	0	2500000	Not initiated				
26	Absence of full-fledged library	Establish new donation of books for existing ones	Promotion of education and Skill development	3000000				100000	200000	300000	0	300000	Not initiated				

Sl. No.	Issues	Plan of Action	Category	Estimated Budget	Yearwise Proposed Allocation						Total Spent (till 3rd Year)	Balance to spent	Current Status	Remarks
					1st Year (2019)	2nd Year (2020)	3rd Year (2021)	4th Year (2022)	5th Year (2023)	Total				
27	Education, especially of girls	Awards and recognition for completion of school education	Promotion of education and Skill development	100000				50000	50000	100000	0	100000	Not initiated	
28	Education, especially of girls	Merit based rewards/scholarships for higher studies	Promotion of education and Skill development	200000				100000	100000	200000	0	200000	Not initiated	
29	Awareness creation among the public and school children	Throughout the period	Promotion of education and Skill development	100000					100000	100000	0	100000	Not initiated	
30	Underemployment of local youth	Skill training, Vocational training, Technical training like ITI training	Promotion of education and Skill development	1396000	396000			500000	500000	1396000	396000	1000000	Initiated	Multi-craft Training program under ESC Initiative
31	Education, especially of girls	Vocational and technical training	Promotion of education and Skill development	500000				200000	300000	500000	0	500000	Not initiated	
32	Education, especially of girls	Life skill education	Promotion of education and Skill development	1000000				500000	500000	1000000	0	1000000	Not initiated	
33	Employment	Local persons	Promotion of education and Skill development	1500000				1000000	500000	1500000	0	1500000	Not initiated	
34	Award	1 prize 2nd prize 3d prize will be given	Promotion of education and Skill development	400000				200000	200000	400000	0	400000	Not initiated	
35	senior citizen	Coordination with Government	Promotion of Health	200000				100000	100000	200000	0	200000	Not initiated	

Sl. No.	Issues	Plan of Action	Category	Estimated Budget	Yearwise Proposed Allocation						Total Spent (till 3rd Year)	Balance to spend	Current Status	Remarks
					1st Year (2019)	2nd Year (2020)	3rd Year (2021)	4th Year (2022)	5th Year (2023)	Total				
36	Upgrading existing health center	Equip with medicines and other facilities	Promotion of Health	3000000				2000000	1000000	3000000	0	3000000	Not initiated	
37	Absence of sanitary latrines in the area leading to open defecation, absence of drainage and SWM	Participatory sanitation and hygiene drives Initiate Participatory Hygiene and Sanitation Transformation (PHAST)	Swachh Bharat Initiative	2000000				1000000	1000000	2000000	0	2000000	Not initiated	
38	Construction of low cost latrines	Household latrines	Swachh Bharat Initiative	2000000				1000000	1000000	2000000	0	2000000	Not initiated	
39	Construction of community Latrines	Community Latrines	Swachh Bharat Initiative	3000000				1500000	1500000	3000000	0	3000000	Not initiated	
40	Education, especially of girls	Opening bank accounts	Women empowerment	180000					180000	180000	0	180000	Not initiated	
41	Women's safety measures	Provision of conveyance and toilets in surrounding villages	Women Empowerment	1000000				500000	500000	1000000	0	1000000	Not initiated	
42	Women representation in local bodies	Initiating vocational training, empowerment and leadership programs	Women Empowerment	400000				200000	200000	400000	0	400000	Not initiated	
					87520883						2220883	85300000		

1. Estimated Budgeted Amount	=	INR 8,75,20,883/-
2. Total Spent till 3 rd Year (2021)	=	INR 22,20,883/-
3. Balance Amount to Spent	=	INR 8,53,000,00/-

Annexure II

Detailed proposed ESC spending and Action plan of 2.0% (Rs. 35 Cr.) of project cost against Sustainable Bamboo Feedstock Value Chain

ACTIONS		ACTION PLAN											
Sl. No.	Issues identified in Bamboo Feedstock Value Chain	Plan of Action	Fiscal Year & Task undertaken	Estimated Budgeted Amount	Amount Incurred till 31.03.2022					Total Spent till 31.03.2022	Balance from the budgeted amount	Status	Comments
					1st Year 2019	2nd Year 2020	3rd Year 2021	4th Year 2022	5th Year 2023				
1	Unavailability of superior bamboo varieties	Establishment of tissue culture lab including strengthen for propagation of identified species / varieties		30,000,000						0	30,000,000	Not started	
		Assistance for establishing of tissue culture lab by Entrepreneurs		15,000,000						0	15,000,000	Not started	
2	Non availability of commercial Bamboo nursery in the region	Establishment of Micro/ Medium nurseries/hardening units		5,000,000						0	5,000,000	Not started	
		Field trials, demonstration and pilot projects of Bamboo Nursery	2021 - Setting up of Bamboo Nursery, Buying saplings and maintenance and plantation 2022 - Repair of Bamboo Nursery	2,000,000			343699.25	74442.04		418141.29	1,581,859	Ongoing	2019 free saplings distributed by procuring from RFRI = 10000 2020 free saplings distributed from inhouse/Hojai nursery = 30000 2021 free saplings distributed from inhouse nursery = 1000

ACTIONS				ACTION PLAN									
Sl. No.	Issues identified in Bamboo Feedstock Value Chain	Plan of Action	Fiscal Year & Task undertaken	Estimated Budgeted Amount	Amount Incurred till 31.03.2022					Total Spent till 31.03.2022	Balance from the budgeted amount	Status	Comments
					1st Year 2019	2nd Year 2020	3rd Year 2021	4th Year 2022	5th Year 2023				
3	Non management of large scale bamboo plantation	Assist in raising high yielding bamboo plantations on commercial basis - Propagation & Cultivation in non forest land, non agricultural land, river banks, community land, waste lands etc.		42,852,000						0	42,852,000	Not started	
		Meticulous monitoring with modern technology like Drone, GIS etc. of the existing as well as newly developed bamboo plantation alongwith evaluation and reporting, Database generation, compilation and analysis.		20,000,000						0	20,000,000	Not started	
		Engagement of third party agencies for management / monitoring of bamboo plantation.		5,000,000						0	5,000,000	Not started	
		Pest and Disease Management of bamboo		1,000,000						0	1,000,000	Not started	
4	Non availability of organised bamboo sector	Support and promote of Farmer Procucer Organisation (FPO) / Farmer Producer Company (FPC), Self Help Group (SHG) for bamboo plantation and backward integration.		10,000,000						0	10,000,000	Not started	
5	Use of traditional Tools, Equipment and machinery	Procurement and distribution of technologically superior tools, equipment & machinery		3,000,000						0	3,000,000	Not started	

ACTIONS													ACTION PLAN												
Sl. No.	Issues identified in Bamboo Feedstock Value Chain	Plan of Action	Fiscal Year & Task undertaken	Estimated Budgeted Amount	Amount Incurred till 31.03.2022					Total Spent till 31.03.2022	Balance from the budgeted amount	Status	Comments												
					1st Year 2019	2nd Year 2020	3rd Year 2021	4th Year 2022	5th Year 2023																
6	Capacity building, Awareness and Skill Development	Technological enhancement of indigenous tools, equipment & machinery		1,200,000						0	1,200,000	Not started													
		Raising awareness among the farmers - Organizing workshop/ Seminars/training, Participation in domestic trade fairs/exhibition etc.		2,000,000						0	2,000,000	Not started													
		Upgradation of traditional farmers and introduction of new skills		1,000,000						0	1,000,000	Not started													
		Skill development/ capacity building and Human Resource Development of farmers, field functionaries, entrepreneurs and others.		3,000,000						0	3,000,000	Not started													
7	Warehousing and Storage	Land lease for storage		13,500,000						0	13,500,000	Not started													
		Management of Bamboo waste in processing units		5,000,000						0	5,000,000	Not started													
		Identification of genetically superior species / varieties suitable for the region/process		3,000,000						0	3,000,000	Not started													
		2020 - 25% on award of the contract to RFRI 2021 - 15% for 1st, 2nd & 3rd Qtr to RFRI 2022 - Sample collection																							
		Region specific study for Moisture loss correlation of bamboo		1,000,000	111262.5	200272.5	45452		356987	643,013	Ongoing														
8	Research and Development	Study for finding content of lignin, cellulose, hemicellulose of bamboo		1,000,000						0	1,000,000	Not started													

ACTIONS			ACTION PLAN										
Sl. No.	Issues identified in Bamboo Feedstock Value Chain	Plan of Action	Fiscal Year & Task undertaken	Estimated Budgeted Amount	Amount Incurred till 31.03.2022					Total Spent till 31.03.2022	Balance from the budgeted amount	Status	Comments
					1st Year 2019	2nd Year 2020	3rd Year 2021	4th Year 2022	5th Year 2023				
	Package and Practices for commercial Bamboo Farming			1,000,000						0	1,000,000	Not started	
	Misc. study in relation to bamboo & value chain - EHS/Process technology/Process characterisation		2021 - EHS, Biodiversity Study, Bamboo purchased and transportation study 2022 - LIE Due Diligence & E stamp, Bamboo purchased and transportation study	8,000,000			4690120.01	2400357.23		7090477.24	909,523	Ongoing	
	Pilot run of Bamboo chipping unit - 2 nos.		2020 - Pilot Unit Load Security 2021 - Infrastructure development cost of two pilot chipping units: chipping machines, electrical connections, weighbridge, sheds, civil works etc. 2022 - Electricity bill, chipping machine - drum type	20,000,000		385920	10376404.28	1703594.37		12465918.65	7,534,081	Ongoing	

ACTIONS				ACTION PLAN									
Sl. No.	Issues identified in Bamboo Feedstock Value Chain	Plan of Action	Fiscal Year & Task undertaken	Estimated Budgeted Amount	Amount Incurred till 31.03.2022					Total Spent till 31.03.2022	Balance from the budgeted amount	Status	Comments
					1st Year 2019	2nd Year 2020	3rd Year 2021	4th Year 2022	5th Year 2023				
9	ICT / Digital Technology	Development of Advanced Digital Technology solution	2021 - Blue print development for digital supply chain solution 2022- Consultancy for Digital Supply Chain solution	150,000,000			974800	2650000		3624800	146,375,200	Ongoing	
				343,552,000	-	497,183	16,585,296	6,873,846	-	23,956,324	319,595,676		

1. Estimated Budgeted Amount	=	INR 34,35,52,000/-
2. Total Spent till 31.03.2022	=	INR 2,39,56,324/-
3. Balance Amount to Spent	=	INR 31,95,95,676/-