



Assam Bio Refinery Private Limited.

Ref.No.ABRPL/SCM/19-20

19.06.2019

Designing Supply Chain Solution for Assam Bio Refinery Private Limited

1.0 About the Company:

We are pleased to inform you that a new joint venture company namely Assam Bio Refinery Pvt Limited has been formed with three promoters namely Numaligarh Refinery Limited, as major promoter along with two other foreign companies namely Chempolis Oy from Finland, technology provider and a clean energy Company Fortum 3B.V from Netherland. The new Company has been registered on 04/06/2018 with its registered Office at Guwahati.

The main objective of this new venture by Numaligarh Refinery Limited is to enhance the production of bio ethanol in the country which to be blended with petrol as per Govt. of India directive and thereby to help the nation in reducing fossil fuel imports, reducing emissions and boost to the rural economy.

Assam Bio Refinery Private Limited has started its activity on ground at its site adjacent to the Numaligrah Refinery Limited immediately after its formation and Engineers India Limited (EIL) has been appointed as EPCM (Engineering, Procurement, Construction and Management). The zero date of the project has already been started and the completion target of the same is April'2021.

2.0 Proposed Supply Chain:

500,000 Tons of green bamboo is required per year for Assam Bio Refinery Pvt.to produce six crore litres of Bio Ethanol along with other products namely acetic acid, furfural and Bio coal. Bamboo is abundantly available in all the North Eastern states. It has been proposed to source bamboo initially from the four states namely Assam, Nagaland, Arunachal Pradesh and Meghalaya. It is proposed to position a well-designed Supply Chain Model to feed the Bio Refinery with pre-processed (chipped) bamboos supplied by the registered bamboo growers to local level entrepreneurs selected for strategic locations and then transporting them through registered transporters. Following activities will be involved in building the supply chain model:

2.1.Stake holders:

- Bamboo Growers : May be individual/collectives/Joint Forest Management Committees
- Local level Entrepreneurs: Around 50 to 60 nos. will be developed in NE states.
- Transporters :To operate in UBER philosophy. Registered under ABRPL but not under contract with ABRPL.

2.2. Transactions at different stages :

- Registered bamboo growers will supply bamboos to the local level entrepreneurs in weight basis and get paid as per the pre-determined price fixed for the zone.
- ABRPL will identify strategic locations for establishing the local level Entrepreneurs (LLEs). LLEs set up the infrastructure facilities as per the advice of ABRPL with or without bank loan, as per their financial position either individually or in group. LLEs will approach banks or other financial institutions LLEs will receive bamboos from the bamboo growers of their respective area of operation in weight basis.



Bamboo suppliers will be paid directly by ABRPL once the weight is acknowledged by both the supplier and receiver.

LLE then chips bamboos and transport the same through registered transporter. ABRPL pays LLE as per agreed formula based on value added activity (linked to moisture content and impurity). LLE provides BG to ABRPL of value equivalent to 7 days of bamboo purchased at LLE's location. If material not supplied within 7 days, BG en-cashed and no further purchase/payment to growers in that region

- LLEs then transport these chipped bamboos through registered transporter to ABRPL plant. LLEs will be in a position to place their truck requirement in the system. Transporters are not under contract with ABRPL. Trucks used for bamboo chip transportation will be having GPS to track their movement and shall be paid in per km per ton basis.

3.0 Scope of work : (Requirement of a total supply chain solution)

- i) Registration of Vendors :
 - a) Bamboo Growers
 - b) LLEs and
 - c) Transporters.
- ii) Establishing Material requirement Planning process
Based on inventory at LLE and ABRPL site and on road.
- iii) Scheduling of receipt of raw bamboo from the bamboo growers and chipped bamboos from LLEs to ABRPL based on inventory at LLE , on transport and at plant.
- iv) Route Planning from different LLEs to ABRPL
- v) Material management at LLEs place
 1. Recording material weight and moisture content & transfer data to ABRPL.
 2. Update of materials at LLE level (chipped and raw bamboo).
 3. Inviting registered transporters for taking load from LLE to ABRPL.
- vi) Establishing financial transaction process directly to stake holders :
 1. Payment from ABRPL to bamboo growers
 2. Payment from ABRPL to LLEs on receipt of chipped bamboos.
 3. Payment from ABRPL to Transporters
- vii) The Supply Chain technology system required for the sourcing of bamboos will be established:
 - System for smooth on boarding of farmers using KYCs
 - Scheduling and Route Planning
 - ERP tool to manage material movement
 - IT system to monitor and track LLEs performances
 - Video analytics tools, if required to full-proof the processes
- viii) Blockchain architecture to be used in the solution to further mitigate the risks and improve the transparency across the supply chain. AI & Computer vision engine to be explored to bring in accuracy and transparency in system. Wherever possible and applicable.
- ix) Solution should leverage digital technologies (IOT , Sensor , GPS, GIS , AI , CV etc) in carrying out transactions and seamless way. (Sort of Uberization in Bamboo sourcing)
- x) Report generation as per requirement.
- xi) Inventory reconciliation, Price adjustment linked to moisture content etc to be part the solution.
- xii) Full proof Gamification and role playing during design stage so that there is no motivation for any stakeholder to involve in manipulation or theft of any sort.

4.0 Supply chain solution must support to the following :

- Data Integration for best strategic planning and analytics



- Integrated control dash board for ABRPL.
- Real time communication and information flow for easy and accurate transaction and planning
- 24x7 option to transact through mobile app and aggregation for supply chain on dashboard
- User friendly admin portal.
- Offline mode usage when network is not available.
- ERP/SAP integration

5.0 Submission of proposal :

- I. Interested parties are required to submit their detail proposal for preparing the Blue Print for Supply Chain Solution as per the scope of work mentioned in point 3.0 and 4.0.
- II. Prospective parties may submit their detail proposal along with the commercial terms latest by **10th July'2019** and time frame to complete the blue print of the Supply Chain Solution. Parties may send hard copy of the proposal duly filled and signed in the following address:

VP (Logistics and supply chain)
Assam Bio Refinery Pvt Ltd.
P.O. NR Project, Post Box No:003
Dist. Golaghat, Assam
Pin: 785699
- iii) Parties may contact VP (Logistics and supply chain) in mobile 9435054214 for any clarification or may write to (Email id:anup.baruah@nrl.co.in).
- iv) Evaluation of the proposal will be based on profile of the company, credential of the company experience in designing similar kind of solutions by using digital technologies (IOT , Sensor ,GPS, GIS , AI , CV etc) and the commercial terms. So parties are requested to provide all the above details with documentary evidence.
- v) Selection of the party is at sole discretion of Assam Bio Refinery Private Limited.

6.0 Disclaimer:

- I. ABRPL has requested submission of the proposal with the best intention to explore the Parties/agencies who are interested to prepare a full proof blue print for ABRPL's supply chain solution, Submission of proposal does not guarantee conversion of the same into any definitive contractual agreements.
- II. It is also agreed that ABRPL in its sole discretion, may reject any and all proposal made by respondent(s), may change the conditions relating to the scope of work or cancel this requirement at any time without assigning any reason.
- III. Prospective respondent(s) acknowledge and agree that response to the request is purely voluntary action on their part and for any expenditure on this account shall be borne by the respondent(s).
- IV. ABRPL will have no obligation or liability to the respondent(s) in the event of cancellation of this requirement.