Supportive I

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Project no: 31103 M ±

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Survey: RAJARAM MAICE PRODUCTS

Requesting 'Organisation: RAJARAM MAIZE PRODUCTS

.

Name and address:

RAJARAM MAIZE PRODUCTS KOMAL NIWAS ÷. KAILASH NAGAR 491441 RAJNANDGAON. INDIA + 91- 90251 05555 Fax: + 91- 7744 224853

E-mail: rmp@rediffmail.com

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Duration mission: October 28th - November 12th 2006

Copy: Mr. Nitin Gupta: General Manager Managing Director Mr. S.K. Gupta: Mr. Rob van Roessel: Country Coordinator Mrs.Rachida Fathi: Assistant Manager Mr. K. R Jain: NMCP Local representative

Adviser: Roel Jans

Terneuzen, November 16th - 2006

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, Printat	e Format   Show full Headers	Erev I N
Reply	Reply A	Mave to Folder
From:	Roel Jans < wjans@p.so.et ri>   Add to,	Address Book   This is spam
To:	Nitin Gupte <rmp@rediffmest.com></rmp@rediffmest.com>	
Subject:	Emailing; Project 31103 M IN final	
Date:	Sun, 19 Nov 2006 16:00 45 IST	
8	Go to Attachment(s)	
Hote	To help protect your privacy, interactions this means	ge have been blocked New Inviges ) What is bie?
Dear N	lítin,	

Best regards to your family.

Roel

The message is ready to be sent with the following file of link attachments: Project 31103 M IN final

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Project 31103 M IN final.doc (Size 186.50 KB) Download Attachment Scan For Virus with F-Secure

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Supportive II

RAJARAM MAIZE PR (POWER DIVISION		Komai Niwas. Kailash Nagar.
Manufacturers of : Quality Maize Starch White Dextrin, Liquid Glucose, and Dextro	n, Yellow Dextrin, ose Monohydrate.	Rajnandgaon (C.G.) Pin - 491 441
		72 225207, 224825, 503213 - 501013 Fax : (07744) 224853 -
Ref. 2006-07/	- -	Date 30/08/2006
To, The DOR:		
-ne D.0.5.		:
REG : METHANE CAPTURE AND USE AS CHHATTISGARH (INDIA).	FUEL AT RAJARAM MA	LZE PRODUCTS.
Dear Sir,		
We have installed a Bio Gas Plan above plant we have deputed 4 sk staff are dedicated workers for Bio Gas plant is running 24 Hour The workers detail as under :-	t in February 2005. illed & 4 unskilled running Bio Gas Play s in a day & 365 day	For running the workers. This at. /s around the year.
1. Shri Tej Prakash Deepak	Managar	· · · ·
2. Shri Chait Ram	Chemist	B.Sc.
5. Shri Tej Ram Patel	Plant Incharg	B.SC.
4. Shri Vishnu Prasad WORKERS :	Supervisor	с в.Sc. B.Sc.
5. Shri Moolchand/S/o. Shri Bhawani Ram Kenwat	Unskilled labo	
6. Shri Shravan/S/c. Shri Govind Ram Marar	<u> </u>	
7. Shri Tukaram/S/c. Shri Kanshiram Sahu	_	
8. Shri Aaduram/S/c.Balliram Kenyat	<u>-</u>	
The above staff is looking after t	<b>*</b>	·
Thanking you,	ne plant since 2003.	-2004.
Yours faithfully, For, RALARAM MAIZE PRODUTSS,		
WWW IT. SIGNATORY). (800		
	an State and Angles	
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Supportive III

# RAJARAM MAIZE PRODUCTS

Manufacturers of : Quality Maize Starch; Yellow Dextrin White Dextrin, Liquid Glucose, Dextrose Monohydrate & All bye products of maize

Ref 2007-08/

To, The D.O.E.,

# REG : CDM PROJECT.

### Dear Sir,

We have installed a Bio Gas Plant in February 2005. For running the above plant we have deputed 4 skilled (Technical) workers. This staffs are dedicated for running Bio Gas Plant. Rajnandgaon is a backward area, So technical experts are not available. In this circumstances the technical staffs are getting higher salary i.e. Rs. 7,000/- to 8,000/- per month and the existing working staffs are being paid Rs. 4,000/- to 5,000/- P.M. In above comparison the technical are being paid more salary.

Thanking you,

Yours faithfully, For RAJARAM MAIZE PRODUCTS, Kailash Nagar Rajnandgaon (C.G.) Pin - 491 441 225207, 224825, 403213, 401013 Fax : (07744) 224853

Date 07/04/2007

Supportive IV

date - 5-12.03

To The managing Inrector. M1.S. Rapaziam Maize Products Reyrandgan. Sub - Regarding Resignation. Dear bir,

I am working in your plant trace last eight month, as a chemist in your rolant. At present. 9 have. been seccirion salary R2 6.000 = 00 (Six Inunsana) prestants, house Real und. other allowances. I have heigher remumer--ation ofter out bide of this back word area. r.e. Rajaandgaon So now I an unable to render further. service in your plant, and want to resign form service.

Therefore I humbly request, you. to kindly acception. resignation and do the Reedful soon. thanking you.

Jeurs farth fully (Chartoam.)

1- 5 Feb. 04

10 the Menaging Director ms Rajarem Maize Braducts, Kajnanigaon (c. 4) -Jub - Regarding Resignation Near Siz,

5 have been vostieng in your Gers Plant bor Eight Month as a manager you are Paying me RS-6000/ Per month and other allowances. It has Come in my knowladge & cen Ruemon Keine survey in Att. or Place. there to see I want to Leave Job with Jou 80 Ban Producing this Resignation letter. béfose yeu. Please acknowledge my resignation and do the needful-Sam

thanking you. yours faith bully TR. Deepek 6/2104 (Tej Brakash Deepale)

Supportive V

# **RAJARAM MAIZE PRODUCTS**

Manufacturers of : Quality Maize Starch, Yellow Dextrin White Boundary Equil Charges, Doxtrose Monohydrate & Ail bye products of maize

Ref. .....

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To, Shri Chait Ram (Chemist), Bio Gas Plant, RAJNANDGAON.

SUB : RESIGNATION.

REF : YOUR LETTER NO. ALL DATED : 5/12/.03.

### Dear Sir,

with reference to your aforesaid letter the management has decided to increase/salary of Rs. 1,000/- i.e. Rs. 6,000/- to Rs. 9,000/ Dom Wonth. All other allowances will be the same.

Thanking you,

For, RAJAHAM MAIZE PRODUCTS, Rakaran Many Products (FACTORY FMAN MONK) &GIRWAR GAUTANQ. Kailash Nagar Rajnandgaon (C.G.) Pin - 491 441 225237, 224825, 403213, 401013 Fax : (07744) 224853

Date 25-12-03.

# **RAJARAM MAIZE PRODUCTS**

Manufacturers of : Quality Maize Starch, Yellow Dextrin White Boundary Equile Chasens, Dovtrose Monobydrate & All bye products of maize Kailash Nagar Rajnandgaon (C.G.) Pin - 491 441 225207, 224825, 403213, 401013 Fax : /07744) 224853

Date 15-02-04

### Ket .....

To, Mr. Tej Prakash Deepak (Manager) Bio Gas Plant, <u>RAJNANDGAON</u>,

SUB : RESIGNATION.

REF : YOUR LETTER NO. NUL DATED : 6-2-0-4

Dear Sir,

With reference to your aforesaid letter the management has decided to increase/salary of Rs. 1,000/- i.e. Rs. 6,000/- to Rs. 7,000/- Per Month. All other allowances will be the same.

Thanking you,

FOR BAJARAM MAIZE PRODUCTS,

Supportive VI

# Skill sets required for operation of bio gas plant and utilization as fuel.

Technical skills	Available at plant (pre-project)	Required in baseline.(Maize processing)
Chemical analysis of gas for measurement of methane content.	×	×
Knowledge of emergency response to gas leakage	×	×
Checking of pipeline integrity	×	×
Knowledge of instrumentation ( flow measurement)	<ul> <li>✓ (available only for water and steam metering)</li> </ul>	$\checkmark$
Knowledge of process control for regulating dryer output	×	✓
Knowledge of flare system.	×	×
Knowledge of waste water plant operation	✓	✓
Maintenance skills for rotary equipment	✓	✓
Local facility for specialized maintenance requirement	×	×

Supportive VII

Amex -7

GETP/DISTILL-ERGY PUNE Fax : 0091-20-5885309-

05 Dec '02 16:19 P.01

04/12/02

मा बहुजन हिताय! बहुजन सुरवाय!

Energy from waste

# GETP SYSTEMS PVT. LTD

Global Enviro-tech & Fower Systems

0-201, Taggester Prag. In. D. P. Roto, Aunor Rus 411 (07 Tel. 1+9 -20-588 (01) - 3 8802 Fax. 1+51-20-588 (00) E-mail Liceto@vstinet. p-p-310 ening

C/O Mr Suryakant Gupta Propuetor Rajaram Maize Products Rajnedgaon

Dear Sir

BIODIGESTER

The commissioning schedule is at annoxine. Please hand over it to our chamist MR Asutosh Shama

Anaeropic digester takes 2 to 3 months for commissioning because the bacteria inside the digester are not developed. The bacteria will grew by eating the food in the effluent(COD & BCD) Therefore commissioning takes time

Further due to low temperature the biological activity is less. Therefore we request that let us not take hasty action but do the commissioning methodically and systematically. We are very schildent that you will set full gas

Thanking you Yours faithfully

A (Aw) H. (), Pant (Chief Executive)

Annexure : Commissioning schedule

Supportive VIII

# RAJARAWI WAIZE PRODUCTS

Manufacturers of : Quality Maize Starch, Yellow Dextrin White Dextrin, Liquid Glucose and Dextrose Monohydrate

Ref. 2000-08/

Kailash Nagar Rajnandgaon (C.G.) Pin - 491 441 © 225207, 224825, 503213, 501013 Fax : (07744) 224853

Date 04/04/2007

### ANNUAL MAINTEMANCE OF CUID DIAGNOTEN AND GAS HOLDER

The Digester hood, valve's and fitments are thoroughly cleaned and painted every 6 - 8 months to remove the scaling and rusting which occurs during regular running of the plant. The gas holder hood is also cleaned and painted with an epoxy to protect it from corrosion. Normally a skilled team is deployed for doing the above cleaning and painting jcb. A site engineer from the supplier (CETP Systems, Pune) is also present during the time of maintenance. Most of the work is done online and no stoppage of production is there.

: \* :

The maintenance schedule followed in the plant is as given below:

Contractory of the local division of the loc	and the distance of the second state of the second state of the second state of the second state of the second	Contraction of Contra		Amount
Equipment	Maintenace Activity	Frequency	Rate	
Digestor Hood	Cleaning & repairing	Cnce in a year	75,000/-	75,000/-
Valves	Cleaning & Painting	- * -	10,000/-	10,000/~
Fitment	Cleaning	Once in Six month	4,000 x 2	8,000/-
Digestor Hd.	Painting	- * -	10,000 X 2	20,000/-
Valves	Painting &	- " -	500 X 2	1,000/-
<sup>F</sup> itment Gas holder	Painting Cleaning &	_ * _ * _	10,000 X 2	20,000/-
hood	painting	0 in	a k	
Gas blower	Cleaning	Unce In a wet	Tumo mil	5.000/-
Glowar Motor	Checking Bearings, Cabl	Monthly	5,000/Year	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Gas burner	Cleaning	Once in Six month	3,000/Year	3,000/-
หมม เรากรอ	leakage		s.nnn./ labour char	ges only.
	TOTAL AMT.	half-dare to be a first district opposition of a first sec		1,47,000/-

For, RAJARAM MALZE RECDUCTS,

Supportive IX

M/S RAJARAM MAIZE PRODUCTS, RAJNANGAON

# SCHEDULES "1" TO "10" ANNEXED TO AND FORMING PART THE BALANCE SHEET AAT 31ST MARCH, 2003 AND PROFIT & LOSS ACCOUNT FOR THE YEAR ENDED ON THAT D.FE

SCHEDULE : 1

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	Gas Plant	Bio	ar & Vehicles	MotorC	Machinery	Plant &			2
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ANNEXURE TO	TAX INVOICE	Page:
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Invoice No: 1165005681 Gur CA No: 1150200097 Your PO No: 2005-05 S.Channel : SMAC	Dated: 05- Dated: 11- Dated: 12-	-FEB-2006 -JAN-2006 -DEC-2005
Ship To: RADARAM MAIZE PRODUCTS NOMAL NIWAS NATLASH NASAR RADNANDSAON CHATTISSARN 491 441 . INDIA EUC Codo : ACZ FG 8034 DXM COL CS1 No : 061/RDN/15/285 C DT:13.10 ST No. : RDN/15/2110/1 DT:14-11.83	30 TIN NO 2262360028	A State A Stat
Payment Term: 75% Payment sgalmet Doc PO TERMS GRANCH Transporter : Thru: Road Transport Waybill No : 0- Freight : To pay by Culfondr Ship Instr : Insurence by Cultomor. THRO' V-Tubric of NC.11 1,00,000/03.	s. 8al. 25% RETENT Sh Delivery at Tranep 30004864 DATED 13/	ION PAYABLE AS PER ip Date: 06-FER 20 orters godown. 1/05 FOR RS.
SAWW FULL	**** ⊮ΩM: ΘΕ∨	Price '
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Ruppes Four Hundred only Sules to registered clients under Form C	07 1.45.400.00	<b>9</b> 4.00 5.31
Adhoe freight Drage Amount		1.51-21

### GETP SYSTEMS PRIVATE LIMITED

C-201, Bageshri, Raagdari, D.P. Road., Aundh, PUNE 411 007. Tel. 020-5888602, 5885305, FAX : 5885308

DATE : 20/04/2002.

M/s. RAJARAM MAIZE PRODUCTS, Kailash Neger, Rajnandgach (C.G.).

A. Sall

REG : SETTING OF BIO GAS PLANT.

Dear Sir,

To.

We hereby offer you setting of Bio Gas Plant based on the following data :-

Total Flow	1	200 M <sup>2</sup> /day
pH	8	4 - 5.5
C.O.D. in mg/ltr	8	15000 to 25000 ppm
T.S.S.	£	2000 ppm
T.D.S.		15000 to 25000 ppm

(B) SCOPE OF WORK :

- Equalisation Tank will not be necessary as the drain of your effluent pumping is already up to pumping base. However, the space will be provided in layout, the same shall be constructed later on if required.
- 2. Nutralisation Tank is already existing as areator No.3 for which pH correction by line will be done by you. Addition of line has been seen by us. From Nutralisation Tank effluent will go to clearifier as digester feed should not contain any line.
- 5. Clearifier overflow will be fed to digester by bump of 5 HP S.S. pump. Two Nos pumps shall be supplied by you, one will be stand-by
- 4. Digester of 1200 N<sup>3</sup> and Gas holder of 200 M<sup>3</sup>, civil works will be done by you, exactly as per drawing send by us.

All necessary inserts and pipes in civil works will be supplied by you. However, all necessary drawing shall be submitted by us.

Cont \*d....2....,

- 11 2 11
- 5. Apart from the above our supervisor will also assist you in civil works. We hope you will complete this system in 2 months.
- 6. Your supervisor will visit twice a month.
- (C) The following items shall be supplied by you :-
  - 1. Bio Gas Burner.
  - 2. Ladder, railing from trap of Bio Gas digester.
  - 5. Booster.

1.

- 4. Pump Motor.
- 5. Valves and piping excluding distribution piping.
- 6. All electrical cable and starter.
- 7. Flare.

We can under-take fabrication work for the above-said item 9 Rs. 8/Kg, material will be supplied by you.

(D) We shall supply the following Mechanical items :

- Digester internals for 1200 M<sup>3</sup> capacity. The digester Internals shall be supplied and fabrication by us which includes Gas solids separator, supporting structure, Epoxy painting (M/s. Ciba Atul make).
- 2. Mechanical works for Gas holder.
- 3. Sedimantrap
   1 No

   Flame arrester
   2 Nos.

   The above items shall cost you Rs. 16.25 Lacs.
- (E) The payment terms shall be as under :-
- 1. 10 % 1.e. Rs. 1,65,000/- alongwith order.
  - 2. Supply of Gas solid separator Rs. 5 Lacs at the time of despatch

1/3//

from Pune/Mumbai.

- 3. Supply of supporting structure and Gas holder steel Rs. 5 Lacs.
- 4. Supply of Epoxy paint and glass cloth Rs. 3,80,000/-.
- 5. Completion on pro-rata basis will be Rs. 80,000/-.
- 6. However, this rates are based on the following assumption :-
  - 1. Gas solid separator Rs. 30/Kg and other simple fabrication Rs. 25/Kg. This above is exclusive of all taxes, duties and freight, the same shall be paid by you at actual.
  - 2. You will supply us power and air compressor at the site free of cost.

1 3

(F) CONSULTANCY CHARGES :

We shall charges Rs. 4,80,000/- as our total comprehensive consultancy Fees. The above fee is excluding of 5 % service tax for documentary paper such as paper challan shall be sent by you.

### (G) PAYMENT SEHEDULE :

- 1. 20 % i.e. Rs. 96,000/- with order.
- . 30 % i.e. Rs. 1,44,000/- against submission of drawing and design.
- 3. 20 % i.e. Rs. 96,000/- against completion of Machanical trails of digester and gas holder.
- -- 4. 20 % i.e. Rs. 96,000/- against achieving 50 % organic load.
  - 5. 10 % i.e. Rs. 48,000/- against successful completion, equivalent amount of valid for 6 months.
  - (H) OTHER TERMS & CONDITIONS :
    - 1. All lodging & boarding, To & Fro A/C IInd Class fare to our engine executives visiting side.

Cont 1 ..... 4 .....

Supportive X

I would like to know whether project has seriously considered the incentive from the CDM in decision to go ahead with the project. Does any documentary evidence is available for that?

The project proponent decided to proceed with the implementation of the project activity a climate change initiative taking the incentives under the CDM into consideration. There is sufficient evidence available in form of documentation clearly showing that the CDM incentive played a role before the decision-making. The same has been provided to the DOE during site validation.

Inconsistency of biogas is debatable because it depends on the effluent load hence if the production is high then the biogas generation would be higher and vice versa.

Inconsistency of biogas generation and the operational risks due to variations in biogas supply rate to dryer were perceived as the risks associated to the implementation of the project activity.

As stated above the generation of biogas depends on the effluent load generated in the plant, which in turn depends on the production. Therefore any variations in production will lead to inconsistency of biogas generation. Further Inconsistency in Biogas generation could be for the following reasons<sup>1</sup>:

1. Limitations related to UASB operations: During operational phase of UASB system, the inhibition in biogas generation may result due to several reasons like inefficient mixing of effluent, excess organic load to the bio-digester, drop in digester temperature, inefficient operation of gas solid separators etc.

Further the UASB system has a long stabilization period, which results in inconsistent biogas generation for the entire stabilization period.

Hence it becomes very essential for the operators to maintain suitable operating

conditions for the adequate and consistent generation of gas from the system all the times.UASB Maintenance

The bio-digester requires maintenance of 20 to 25 days in every three years to replace the corroded hood of the digester. There would be no biogas supply availability during UASB Maintenance.

- 3. Affect of temperature on biogas supply to Dryer:
  - a. During winter seasons, low ambient temperatures (10oC and below) at the project activity site leads to accumulation of moisture in the internal lining of the biogas pipeline, which results in reduced biogas supply to the burner and frequent flame extinguishes.
  - b. During the summer, high ambient temperatures (40oC and above) at the project activity site lead to non-performances and poor efficiency of the bio-digester since the mesophillic bacteria can not thrive at such high ambient temperatures. Non-performances of bio-digester result in reduced/inconsistent biogas supply to burner. The most important parameter in drying operation in flash dryers is maintaining required inlet temperature. If inlet temperatures are restrictively low due point (a) and (b) the dryer design and size would need major modified.

I would like to know whether the project is facing any investment barrier.?What was the investment for the above project? The project is saving 80 T FO per year by considering Rs

<sup>&</sup>lt;sup>1</sup> Reference Section B.3. of the PDD

20 per liter then the savings could be 1.6 millions per year.

In the additionality section, the project proponent highlights the limitations of implementing the project activity. These limitations were primarily due to the technological and operational barriers which they would need to overcome in order to implement the project activity.

Further it may be noted that the project activity is the first of its kind in the starch industry in the state and third in the country. From this it is clear that the project activity was not a common prevailing practice. Small scale sector – starch industry owners have been reluctant to undertake such project activities due to its non-precedence, which is a result of the technical difficulties associated to it and the non-availability of skill man-power to operate the systems.

Due to these existing barriers, the project proponent was not keen to invest in the project activity implementation, and therefore the investment barrier did exist. CDM revenue was one of the driving factors to project implementation.

The CDM revenue stream from the sale of CERs will encourage similar small and medium scale sector owners to undertake such initiatives.

Inefficient mixing of effluent, excess organic load to the bio-digester, drop in digester temperature, inefficient operation of gas solid separators etc. looks very elementary things.

Though the operational problems due to the factors mentioned above look elementary, monetary losses to the project activity due to disturbances in the system / emergency situation which may arise due to project activity are very significant. Considering the size of the industry and technical know-how which exists in the plant and region for the similar kind of applications, it is very difficult to rule out the limitations associated to the changes in these parameters.

To the best of my knowledge only during the start off period of the digester the stabilization period would be larger then based on the load of effluent it should be constant.

Though the stabilization period would be larger only during the start off period, the affect of other operating parameters on the stabilization of the digester can not be predicted easily as it is very essential to maintain all the parameters consistently.

I would request the PP to explain how this CDM revenue will help in the viability of the project and how does it help to overcome the stated barrier.

Considering the significant possible revenue losses due to inconsistent gas availability or gas stoppage due to any of the technological and operational barriers mentioned in PDD, availability of CDM revenue for the PP would definitely help to bridge the gap to minimize the loss due to production stoppage. Further the CDM revenue will help the PP build a more robust emergency preparedness plan and system.

The availability of CDM revenue to these projects would definitely encourage others with similar applications to take up such projects in future which help for the sustainable development in the industry.