



Mr. José Domingos Miguez
Chair, CDM Executive Board
UNFCCC Secretariat
CDMinfo@unfccc.int

04 July 2006

Re Request for review of the request for registration for the CDM project activity "Waste heat recovery project based on technology up-gradation at Apollo Tyres, Vadodara, India" (Ref. no. 0389).

Dear Mr. Miguez,

SGS has been informed that the request for registration for the CDM project activity "Waste heat recovery project based on technology up-gradation at Apollo Tyres, Vadodara, India" (Ref. no. 0389) is under consideration for review.

Through this letter we would like to comment on the reasons for review and provide additional information, Information has also been provided by Apollo Tyres Ltd., which has been sent to UNFCCC Secretariat and uploaded.

1a) "The investment test has not been done properly by the developer and not been appraised properly by validator. The validator has not recognized that the alternative to the project "power and steam generation with boiler and steam turbine using Indian coal as fuel" is unrealistic due to the shortage of domestic coal which is thus not delivered to private industries but only to power plant and state industries. So the only alternative "Generation with boiler and steam turbine using petcoke and imported coal as a fuel" is realistic. The PDD does not give the assumption about the imported coal used to derive IRR for the alternative. Moreover, the PDD does not include the enclosures mentioned in page 13 so it is impossible for me to check IRR calculations."

The identification of the alternatives was based on a feasibility study of the project activity with all the options/alternatives available (including Indian coal as fuel). The study was conducted by a Thermax, a third party, and included the total costs of energy for all the alternatives. A copy of this study is attached as Annex 01. This report was consequently used by the project to calculate the IRR. So although some of the alternatives can be considered as unrealistic, data were available and have been validated.

The price of imported coal used to drive the IRR for the alternative was taken on the basis of a letter faxed by M/s Janardan Metal Industries stating prices for different kinds of coal to the project developer. The letters are attached as Annex 02. The recent letter from the supplier also states that there is no coal scarcity in the region and easily available at given price.

The enclosure to the PDD were available but were not uploaded as part of the request for registration. Please find attached all relevant enclosures (Annex 03) with this clarification for all the analysis in spread sheet.

1b) The natural gas price assumption for the project case is unrealistically high. According to the Indian ministry of oil, the price per m³ was 2.85 Rs in 2004 (see petroleum.nic.in/petstat.pdf, table 30). Even if pipeline costs of 1.1 Rs/m³ are taken into account, the price is still just half of the price quoted in the PDD. I strongly suspect the project case to become the most attractive if realistic natural gas price is used.

The natural gas price (Rs.8.19/SCM) has been taken on the basis of communication between the client and GAIL (Gas Authority of India Ltd.). The copy is attached as Annex 04 for your kind reference. The finalised actual price of gas is also nearly same. The actual invoice copy is also attached in Annex 04.

1c) The sensitivity analysis is designed in a way (assumption about the price changes) that always make the project case less attractive than the alternative. The EB should require project developers using an investment analysis to state all the assumptions and to publish the excel sheets as annex to the PDD. In case of confidentiality issues, the sheets should at least be made available to the DOE and the RIT members to check the calculations.

The enclosure were available but were not uploaded as part of the request for registration. Please find attached all relevant enclosures (Annex 03) with this clarification for all the analysis in spread sheet.

2) The PDD does not contain any documentation on the sources of the electricity grid emission factor. It is just mentioned in table A.4 of the PDD as 760g CO₂/kWh. While the validator states of page A-10 that supporting information was provided and therefore closed NIR 4, the supporting information has not been integrated in the PDD.

The enclosure containing all the grid emission factor calculation is attached in spread sheet (Enclosure 8 in Annex 03)

3) The validation findings overview (p.3) states that the investment barrier is used for additionality, then mentions a technology barrier but only gives an argument on the barriers according to prevailing practice. A letter from the producer of specific type of equipment that this equipment (produced by the same producer) has not been used in the host country is not sufficient evidence for the prevailing practice barrier, as similar equipment manufactured by other producer could be widespread in the host country.

SGS decided on the additionality of the project based on the presented "investment barrier". It is regarded as sufficient to prove one barrier. However, please find below explanation on how the relevant NIRs was closed out.

The above mentioned letter does not fulfil the requirements specified by SGS to close NIR 4 stated on page A-9 of the validation report: " Under common practice analysis, please provide other same kind of project's name and distinctions between them and project activity."

The project activity is a small scale project activity and according to Attachment A to Appendix B project participant provided an explanation to show that the project activity would not have occurred anyway due to Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions. This barrier was justification enough to prove the additionality of the project activity and was verified.

Moreover, the common practice was analysed in the region to get more information why the Low NO_x turbines were not commonly used at the time of project activity was started. Low NO_x turbines were not



found common in manufacturing industries and a letter from Turbine supplier was taken as evidence. The other companies having gas turbines were also contacted to find out if they have such turbines. It was found that the use of Low NOx turbine was not common practice in the region. The company details are attached as Annex 05. This was additional information and was not directly going to affect project additionality of SSC project activity and hence NIR4 was closed out.

Ad 4) The spreadsheet in annex 4 (Calculations) attached to the CDM-SSC-PDD (version 02) has columns missing which was not noted by the DOE.

The information was available in MS Word file and reviewed. The corrected CDM-SSC-PDD is attached for reference (Annex 06).

We apologize if the initial validation report has been unclear and hope that this letter and the attached information address the concerns of the members of the Board.

Sanjeev Kumar (+91 124 2399990 – 98 ext 219) will be the contact person for the review process and is available to address questions from the Board during the consideration of the review in case the Executive Board wishes.

Yours sincerely

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Annexes:

- Annex 01: Feasibility Study Report
- Annex 02: Coal supplier letters
- Annex 03: Enclosures to PDD
- Annex 04: Communication with GAIL and Actual Invoice
- Annex 05: Companies having gas turbines in the same region
- Annex 06: Apollo Tyres SSC_ PDD-220606

Subject: Feasibility for 10 MW cogen Plant**Date:** Tue, 4 Feb 2003 15:46:12 +0500**From:** kjilkar@THERMAXINDIA.COM**To:** vkalele@apolotyres.com**CC:** vkalele@apolotyres.com

Dear Mr Kalele,

At the outset let me thank you and your team for the kind courtesy you extended to us during our visit to your plant last week. As discussed with you we are enclosing a preliminary feasibility for your evaluation for the 10 MW cogeneration plant.

The feasibility considers the following options

1. Grid + Stand alone boiler
2. DG alongwith an EGB and Fired boiler
3. STG based on petcoke and imported coal
4. STG based on indian coal
5. STG based on Furnace oil
6. Gas Turbine based system with Heat recovery steam generator and a fired boiler.

You will observe that the STG based option on Petcoke is the most attractive as it offers the earliest payback for the project.

Keeping in mind the shortage of raw water we have also considered an air cooled condensor. This has brought down the overall make up water requirement to less than 20 M3/Hr. This is of course based on a specific raw water analysis.

As far as delivery is concerned we may be in a position to offer the boiler for this option within 11 months which will meet your process steam requirement and power can be drawn from the grid. The STG and its BOP will follow in 4-6 months. This is subject to the availability of pressure parts while placement of order.

As far as the loads from the banberies is concerned we propose that you run the Cogeneration plant parallel with the grid to absorb the fluctuations from the sudden load throw off and load on conditions. You may also like invetsigate the banking arrangement with GEB (I have explained to Mr Moses)which will bring down your energy bill further.

Please let us know your views on the aboveand feel free to call me in case you have any doubts.

With the above background we would like to make a presentation to Mr Prabhakaran as well as your entire plant personnel on Thermax Capability to design engineer procure and construct a cogeneration plant on turnkey basis. Please let me know a convenient date when I can arrange this prsentation.

(See attached file: FEASS_KALELE_4-02-03.xls)

Reards

Kirtiraj Jilkar

A Power Data					
1	Average Power Demand for Process	KW	12000.0	12000.00	24000.00
2	Specific Power Consumption	Kwh/Kg	0.80	1.20	1.20
3	Power From CPP	KW	8200.00	8200.00	16400.00
4	Power from Grid for Banberry operation	KW	4500.00	4500.00	9000.00
5	Proposed Size of Power Plant Option I	KW	NA	5000.00	
6	Proposed Size of Power Plant Option II	KW	NA	10000.00	
7	Proposed Size of Power Plant for meeting current & expansion demand		NA	NA	25400.00
B Steam & Condensate Data					
Process Data					
1	Average Steam required for Process	TPH	23.00	18.00	41.00
2	Peak Steam requirement for Process	TPH	30.00	23.00	53.00
3	Specific Steam Consumption for process	Kg/Kg	2.70	2.70	2.70
4	Steam for chilling	TPH	NA	5.80	7.92
4	Controlled extraction Pressure	Ata	22.00	22.00	22.00
5	Condensing to vacuum	Ata	0.10	0.20	0.20
6	Condensate Return #	%	25.00	25.00	25.00
7	Temperature of Condensate #	Deg C	90.0	90.00	90.00
8	Pressure of the Condensate	Ata	4.5	4.50	4.50
C Steam Generator Data for Process					
1	Boiler Capacity for process requirement	TPH	30.00	33.00	
2	Boiler Steam Generation Pressure	Ata	20.00	20.00	
3	Boiler Steam Generation Temperature	Deg C	210.00	210.00	
D Steam Generator Data for Power(including process and chilling load)					
1	Boiler Capacity for Power	TPH	0.00	68.00	2 x 76
2	Boiler Pressure	Ata	0.00	65.00	65.00
3	Boiler Temperature	Deg C	0.00	495.00	495.00
E Chilling Load					
1	Process	TR	380.00	250.00	630.00
2	Air conditioning	TR	150.00	1200.00	1350.00
3	Total	TR		1450.00	1980.00
4	Steam required for Vapour Absorption Chilling	Kg/TR		4.00	4.00
5	Total Steam required VA Chilling	Tons		5.80	7.92
F Water Requirement					
		M3/Day	1200.00	2300.00	3500.00
G Production of Tyres					
		Tons/Day	110.00	90.00	200.00
H Cost of other Utilities					
1	Cost of Rawwater*	Rs/M3	5.00		
2	Cost of Steam	Rs/Ton	300.00		
3	Grid Power	Rs/Kwh	5.80		
4	Cost of Lube Oil	Rs./Ton	70000.00		
5	Cost of Manpower Consumables and chemicals	Rs/Kwh	0.20		
I Fuel Data					
Fuel for the Cogeneration plant					
1	Furnace Oil	KCAL/KG	10200.00		
2	LDO	KCAL/KG	10608.00		
3	Imported Coal	KCAL/KG	6300.00		
4	Indian Coal	KCAL/KG	3000.00		
5	Natural Gas	Kcal/Nm3	8750.00		
6	Petcoke	KCAL/KG	8000.00		
J Cost of fuel					
1	Furnace Oil	Rs./Ton	11000.00		
2	LDO*	Rs./Ton	18000.00		
3	Natural gas*	Rs./NM3	8.00		
4	Imported Coal	Rs./Ton	2400.00		
5	Indian Coal	Rs./Ton	2500.00		
6	Petcoke	Rs./Ton	2000.00		
7	Limestone	Rs/Kg	0.40		
K DG Data					
1	2 x 16V32 Wartsila	KW	8400.00		
2	Auxiliary Power Consumption #	%	5		
3	Net Power	KW	8395.00		
4	Plant Load Factor	%	90.00		
5	Availability	Hours/Year	7500.00		
6	Water Requirement	M3/KW/Day	0.03		
7	Cost of Manpower Consumables and chemicals	Rs/Kwh	0.30		

S.No	Particulars	Units	Grid Based System	DG Based on FO	STG on Petcoke+ Imp Coal	STG on Indian Coal	STG on Furnace Oil	GTG BASED ON GAS
I	II	III	IV	V	VI	VII	VIII	IX
For Expansion								
A	Power Data		NA	(2x16V32)	1 x 10 MW	1 x 10 MW	1 x 10 MW	1 X 10 MW
1	Gross Power Generated for DG ISO (2 x 4 2) STG (1 x 10) GTG (1 X 10 MW)	KW	12000.00	8400.00	10000	10000	10000.00	10690.00
3	Plant loading	%	100%	90%	100%	100%	100%	100%
4	Generation at Site	KW	12000.00	7560.00	10000.00	10000.00	10000.00	8244.00
5	Auxilliary Consumption	KW	0.00	378	1250.0	1250.0	1250.0	534.5
6	Net Power Generated	KW	12000.00	7182.00	8750.00	8750.00	8750.00	7709.50
7	Operating hours per annum	Hours	8760	7500	8200	8200	8200	8400
8	Units exported per annum	Lac KWh	1051.20	536.65	717.50	717.50	717.50	647.60
9	Import from the grid	Lac KWh	0.00	512.55	333.70	333.70	333.70	403.60
B	Steam Data							
1	Steam generation from system	TPH	0.00	3.50	29.00	29.00	29.00	20.00
2	Deficit Steam quantity	TPH	29.00	25.50	0	0	0	9.00
3	Additional Boiler required		Yes	Yes	No	No	No	Yes
4	Capacity of Additional boiler	TPH	33.00	28.00	0	0	0	10.00
C	Fuel Data							
1	Fuel for the plant		Furnace Oil	Furnace Oil	Petcoke+Imp Coal	Indian Coal	Furnace Oil	Gas
2	Fuel Required annually							
	Fuel for Power	TPH or M3/Hr	0.00	1.66	6.56	15.99	4.49	2389.88
	Fuel for steam	TPH	1.71	1.76	0.00	0.00	0.00	0.63
D	Lube Oil Data							
1	Lube Oil required per day	Kgs/ Day	5.00	172.37	10	10	8	2
3	Cost of Lube oil per Annum	Rs Lacs	0.18	37.71	2.39	2.39	1.91	0.49
E	Operating Data							
1	Interest on Capital (Assuming 100% Debt)	%	8%	8%	8%	8%	8%	8%
2	O&M Cost on Gross generation	Rs./KWh	0.05	0.25	0.2	0.2	0.2	0.25
3	Estimated Plant Life	Years	25	10	25	25	25	25
4	Depreciation rate expected	%	4%	10%	4%	4%	4%	4%
H	Estimated Project Cost(Not Plant and Machinery cost)	Rs.Crores	1.00	28.00	38.00	37.00	35.00	40.00
I	Cost of Power							
1	Fuel Cost for Power	Rs Crs	0.00	13.72	11.56	32.78	40.50	16.61
2	Grid Power	Rs Crs	60.97	29.73	19.35	19.35	19.35	23.41
	Contract Demand Charges-180perKVApr Month #	Rs./Crs	3.24	1.08	0.81	0.81	0.81	0.81
4	Lube Oil Cost	Rs. Crs	0.18	0.38	0.02	0.02	0.02	0.00
5	O&M Cost	Rs. Crs	0.53	1.42	1.64	1.64	1.64	2.24
6	Interest Cost for 65% debt	Rs.Crs	0.05	1.45	1.98	1.92	1.82	2.08
7	Steam generation Cost	Rs Crs	15.95	16.42	0.00	0.00	0.00	5.89
8	Depreciation Cost per annum	Rs Crs	0.04	2.80	1.52	1.48	1.40	1.60
9	Cost of Limestone	Rs Crs	0.00	0.00	0.98	0.98	0.00	0.00
10	Cost of water	Rs Crs	0.00	0.04	0.00	0.00	0.00	0.00
J	Delivery in months	Months	6	8	15	15	14	12
K	Total Cost of Energy for Power,Steam (Fixed Plus Variable)	Rs Crs	80.96	67.04	37.87	59.00	65.54	52.64
L	Analysis							
1	Overall Savings over Grid Operation per Year	Rs.Crs		13.92	43.09	21.96	15.42	28.32
2	Payback with respect to Grid	Years		2.01	0.88	1.69	2.27	1.41
3	Overall Savings over DG Operation per Year	Rs.Crs			29.18	8.04	1.50	14.40
4	Payback with respect to DG Taking Differential Cost	Years			0.34	1.12	4.67	0.833

SNO2

TO: M/S. Apollo Tyres Limited
ATTN: Mr. Vikram Kalele
FROM: Raxit Parikh
FAX NO: (02668) 263432
NO. of PAGES: - INCLUDING THIS PAGE
REF.: DATE: 18/2/2003

JANARDAN METAL INDUSTRIES
 B/H. Atledara Rly. Station
 P.O. Atledara, BARODA-390 012.
 Phone : 0265-340632
 FAX : 0265-342335

FAX TRANSMISSION

Dear Sirs,

As per telephonic talk with you and as per your requirement the Budgetary price for diff. types of coal are as under.

Type of coal	Rate per Ton	Gross calorific Value	Sulphur %
Indian coal	2700/-	4800	-
Pet coal	3000/-	7000	8%
Imported coal	3000/-	6000	-

We hope that above will meet with your requirement.

With Regards,
Raxit Parikh

IF THIS MESSAGE IS RECEIVED INCOMPLETE, PLEASE TELEPHONE (0265) 540032

TOTAL P. 01

Raxit Parikh
 Raxit Parikh



SUBJECT TO VADODARA JURISDICTION

JANARDAN METAL INDUSTRIES

Engineers, Manufacturers, Steel Fabricators & PipeLine Contractors
And Approved Boiler Repairers

Behind Atladara Rly. Stn. Padra Road,
ATLADARA, VADODARA - 390 012.
Telephone: Factory & Office: 2680032
Telefax: 2681335 Residence: 2340936
Email: jmi@icenet.net, jmi@icenet.co.in

Date: 16. 06. 2006

To,
Apollo Tyres Limited
Village: Limda,
Tal. Waghodia,
Dist. Baroda

Dear Mr. Vikram Kalele,

This has reference to our telephonic discussion regarding availability of Indian coal.

We had indicated to you earlier vide our fax dated 18-02-2003 regarding availability and rate of Indian Coal and once again we confirm that there is no problem regarding availability of this coal.

To give you more confidence, this time we have arranged quotation of all grades of Indian Coal from M/S Shah Coal Pvt. Ltd. directly on your name (A copy of which is attached with this letter).

Please confirm your firm requirement at the earliest for further action.

Regards

For Janardan Metals Industries

Partner



SHAH COAL PVT. LTD.

COAL & COKE MERCHANTS & COMMISSION AGENT

A-8, 3rd Floor, Maiz Apartments, 12th TPS Road, Shuja Bag, Santacruz (E), Mumbai-400 055.
Ph. (O) : 2610 1955 / 2612 4811 / 3092 2353 • Fax : 2618 2957 • E-mail : shahcoalpvtltd@vsnl.net

Dt - 16/6/2006

To,
Mr. Vikram Kalele,
Group Manager - Project,
Apollo Tyres Ltd.
Limda Plant,
Baroda

Sub: Supply of Steam coal to your plant at Baroda

Dear Sir,

With reference to your enquiry for procurement of Steam coal to your plant at Baroda, we hereby give our offer for supply of coal by road -

Type of Coal	Grade	Rate / Ton
Steam Coal	"A"	Rs.4,000/-
"-----"	"B"	Rs.3,800/-
"-----"	"C"	Rs.3,600/-
"-----"	"D"	Rs.3,200/-

The above rate/ton is only the cost of coal. Transportation charges and 4% V.A.T. shall be charged on above mentioned cost of coal.

We hope that you find our offer fair and reasonable and shall place your valid order at the earliest.

Thanking you,
Yours truly,
For Shah Coal Pvt. Ltd.

V.R. Ghate

Director.

Subject: FW: AVAILABILITY OF NATURAL / LNG

Date: Thu, 3 Apr 2003 11:19:33 +0530

From: Pankaj Bhagat <p.bhagat@gail.co.in>

To: "vkalele@apolotyres.com" <vkalele@apolotyres.com>

CC: "vikramvk@satyam.net.in" <vikramvk@satyam.net.in>

S.No. 5

Kind Attn. : Shri VIKRAM KALELE

This has reference to our telecom, Our point-wise reply to the queries are addressed at follows:

1 The indicative price of RLNG from Dahej would be in range of Rs 7100 - 9500 / 1000 SCM (exclusive of tpt, taxes, levies). The price is under finalization and any benefit would be passed on to the customer.

2. The agreement from supplier of LNG is already in place. PLL is joint venture of major 'navratnas' viz GAIL, IOCL, BPCL and ONGCL. GAIL is investing about Rs 3000 Crores for pipeline infrastructure and similar amount is being invested by M/s PLL at Dahej terminal. The expected schedule of supply of RLNG from Dahej is from 1st Quarter 2004.

3. The price of RLNG would comprise of LNG FOB, Shipping, Regasification, transportation, levies, duties and taxes.

4 The indicative composition would be as follow:

Components	Mol%
C1	not less than 85
C2	not more than 9.2
C3	not more than 3
C4	not more than 2
C5+	not more than 0.25
N2	not more than 1.25
Total Sulphur	10 ppm(wt) max

5,6,7 The pressure would be to suit the customer requirement and GAIL would supply RLNG to the customer's plant.

Best regards

Pankaj Bhagat

Manager (Mktg.)

EXPECTED RLNG COST DETAILS

1 QUANTITY REQUIRED	74000 SCM/DAY		
2 RATE Rs/MMBTU	136 Rs/MMBTU 42 Rs/MMBTU	a) FOREIGN CURRENCY COMPONENT (USD) b) INDIAN RUPEES COMPONENT	} BOTH OPTIONS ARE AVAILABLE
		1. (ESCALATING @ 5% ON ANNUAL REST BASIS FOR FIVE YEARS) 2. (WITH 47 Rs/MMBTU THERE WILL NOT BE ANY ESCALATION)	
3 TOTAL	178 Rs/MMBTU (FOR OPTION 1/Rs182 FOR OPTION 2)	8,131589	
4 SALES TAX @ 12%	21.36 Rs/MMBTU		
5 GRAND TOTAL	199.36 Rs/MMBTU (Rs/- 7.85 /SCM)	5.8	
		0.290541	
6 TRANSPORTATION CHARGES @ Rs 645000/- PER MONTH (FIXED)	0.29 Rs/SCM (Rs/- 7.32 /MMBTU)		
7 FINAL PRICE OF NATURAL GAS IN Rs/-/MMBTU	206.68 Rs/MMBTU		
8 FINAL PRICE OF NATURAL GAS	8.19 Rs/SCM		

(GAS SHALL BE SUPPLIED AT 20°C TO 45°C AND 19+/- 1 KG/CM² PRESSURE)

Gas Turbine Installation Details For Near By Industries.

Sr. No.	Company Name	Unit Installation Detail	Contact Person	Mode of Communication
1	GAIL, Waghodia Plant	Make – Rolse Royes Capacity – 29 MW Model – RB2 11 Type – Standard Combustion (Without DLE) No. Of Unit - 2	Mr. A K Verma, Plant Operation In charge	By E-Mail / Telecom (Attached below)
2	M/S Alembic Ltd., Baroda Plant	Make – Alstom Capacity – 4.9 MW ISO Model – TYPHOON -M Type – Standard Combustion (Without DLE) No. Of Unit - 3	Mr. A V Bhatt, Power Plant In charge	By E-Mail / Telecom
3	M/S Sarabhai Ltd., Baroda Plant	Make – Solar Capacity – 4.4 MW ISO Model – Centur 50 Type – Standard Combustion (Without DLE) No. Of Unit - 1	Mr. Uday Dholkia, Power Plant Installer Agency	By E-Mail / Telecom
4	M/S Bell Ceramic Ltd. Dora, Baroda Plant	Make – Solar Capacity – 1.17 MW ISO Model – Saturn 20 Type – Standard Combustion (Without DLE) No. Of Unit - 1	Mr. Manoj Sheth Power Plant Supplier Agency	Old Supplier Data Available