

Minutes of the Technology and Finance Standing Committee (TFSC) Meeting held on Wednesday, 5th June, 2013 at 11:00 A.M. in the Training Room –II of CDC, Core 4B, 2nd Floor, India Habitat Centre, Lodhi Road, New Delhi – 110 003.

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List of participants is attached as **Annexure - I.**

The Minutes of the TFSC meeting held on 7th February, 2013 were circulated to all the Members of the Committee. Since, no comments have been received, the Minutes were adopted.

Dr. A. Duraisamy, Director (O) and Member Secretary, TFSC welcomed the Members and informed that the Chairman Dr. B. Sengupta is not able to attend the meeting due to some pressing engagements and has authorized him to select the senior most Member to Chair the Meeting. Accordingly the name of Mr. H.S. Kaparwan was proposed with consensus to Chair the Meeting. The Director (O) then apprised the Committee about the actions taken by the Ozone Cell on recommendations made by the TFSC during its last meeting held on 7th February, 2013.

Action Taken: The following three applications were considered for issuance of duty exemption certificate for import of goods needed for manufacturing activity with non-ODS technology.

1. M/s SRF Ltd., Gurgaon
2. M/s SATA Vikas India Pvt. Ltd., Faridabad (District) Haryana
3. M/s Sanden Precision Parts Pvt. Ltd., Neemrana (Rajasthan)

All three applicants gave presentation in support of their project before the Committee.

M/s SRF gave the first presentation. The Committee observed that while the special alloy tubes and catalysts being imported by M/s SRF Ltd., are reasonable to consider, the purchase of goods fabricated by M/s Larsen & Toubro by M/s SRF on high seas basis and its eligibility for duty exemption is not and requested M/s SRF Ltd., to modify and resubmit only the proposal of

imports by M/s SRF for further consideration. The Committee recommended the application for duty exemption of (i) M/s Sata Vikas India Pvt. Ltd., Faridabad (District) Haryana (ii) M/s Sanden Vikas India Pvt. Ltd., Neemrana (Rajasthan) after being satisfied by their presentation.

Ex-post facto approval of ESC will be taken in its next meeting. The Committee noted the above.

The Committee then considered the following Agenda items:

Agenda Item No. 1

The revised application of M/s SRF Ltd., for duty exemption (a) for import of special metal alloys tubes and parts for fabrication of a HFC-134a and anhydrous hydrofluoric acid (HF) manufacturing plant and (b) Chromia Catalysts for operation of the plant at Dahej in Gujarat.

M/s SRF Limited, is a large public limited company with head quarters in Gurgaon (Haryana) is the only manufacturer of the non-ODS refrigerant HFC-134a in India. The company is expanding and setting up a large plant at Dahej (Gujarat) to manufacture 12,500 tpa of HFC-134a and 20,000 tpa of anhydrous hydrofluoric acid (HF) to meet the large demand of HFC-134a in the international as well as domestic market.

The process of manufacture of HFC-134a starts with fluorination of trichloroethylene (TCE), with hydrogen fluoride (HF) in the presence of catalysts producing mixtures of partially fluorinated corrosive gases which are separated and recycled by special low temperature multistage distillation processes. The mixture of gases containing HCL, HF, partially fluorinated organics and moisture is highly corrosive and special corrosion proof alloy materials like Inconel, SA537 and Hastelloy tubes and plates are required to fabricate the fractional distillation columns and other parts. M/s SRF has applied for duty exemption for import of these tubes and other material like

catalysts needed for the reaction. The details of these tubes and the catalysts are given in table below :

Table 1

S. N.	Description	Qty.	P.O. No and Dated	Price in Foreign currency	Price in INR (in Rs Lacs)
(I) Direct Import by SRF Ltd.,					
1	Inconel Tubes for Heat Exchangers (Details as per Annex. II)	9573 Nos	SRF/DAHEJ/P1 Project/8096 dated 16.10.12	8,68,611/- GBP	7,64,37,768/-
2	Hastelloy Tubes for HEAT Exchangers (Inconel Alloy C-276, cold drawn tube, pickled, annealed, (ASME SB 622 2010 UNS N10276) size : 25.4ODX2.11 MINWA X 1000 MM cut .	170 Nos.	SRF/CB-DAHEJ / P1-Project / 1462 dated 12.12.2012	17,292.50 GBP	15,21,740/-
3	Bellow sealed globe valves	60 Nos.	SRF/DAHEJ/P1 Project/8094 dated 16.10.2012	5,50,050/- Euro	3,91,63,560/-
4	Catalyst Chromia catalyst JM 62-3M series as per enclosed specs. (Details as per Annex. III)	90,000 kg	SRF/DAHEJ/7841 dated 27.09.2012	28,80,000/ GBP	25,34,40,000/-
5	Inconel – 600 wire for springs: (Inconel alloy 600 cold drawn wire round annealed, coil having specification as per ASME SB 166 ISS A 03 UNS No 6600 min tensile strength : 552 MPA, 3.5 Dia MM)	1715 kg	SRF/CB-DAHEJ / P1 – Dahej / 2105 dated 18.01.2013	34,300 /- GBP	30,18,400/-
6	Magnetic Drive chemical process pumps (Details as per Annex. IV)	2 sets	SRF/project / Dahej / 1823 dated 02.01.2013	32,420.20 Euro	23,08,318/-
				Total	37,58,89,786/- (37.6 crores)
				Duty payable @ 7.5%	2,81,91,734/- (2.82 crores)

The total price of these imported goods is approximately Rs. 37,58,89,786/- (37.6 crores) and duty payable on it @ 7.5% would be Rs. 2,81,91,734/- (2.82 crores).

In their presentation before the committee the company representative explained the use of these special alloy materials for fabrication of fractional distillation columns for manufacture and purification of HFC-134a. They also

gave details of Chromia catalysts needed for fluorination of TCE to HFC-134a along with other fluorinated impurities.

It was mentioned specifically that they have already imported item nos (1) Inconel tubes and (2) Hastelloy tubes of Table 1 paying duty as they needed them urgently for the project. They also explained details about the Chromia catalysts in reply to queries by some members. As desired by the Committee M/s SRF have confirmed in writing that the Chromia catalyst under consideration shall be used fully as initial charge for start up of the manufacture of 12,500 TPA HFC-134a plant.

The Committee noted these and particularly the fact that part II of the earlier project associated with M/s Larsen and Toubro has been removed from the project. The Committee recommended for approval for duty exemption for item no. 3, 4, 5 & 6 of Table 1 of the application of M/s SRF considered in this meeting. Accordingly, the revised cost of equipment works out to be Rs. 29,79,30,278/- for which the duty exemption @ 7.5% works out to be Rs. 2,23,44,770/-

The Committee noted that all the required documents have been submitted by the firm and recommended the application for duty exemption in accordance with the guidelines of the scheme.

Agenda Item No. 2

The application of **M/s Subros Ltd.**, Noida, for duty exemption for import of 6 pieces of equipment needed for enhancing the production capacity and import substitution at their Noida (U.P) plant.

M/s Subros Ltd., is the largest manufacturer of car air-conditioners in India with a capacity of 7,50,000 units manufactured in their plants at Noida (U.P.), IMT Manesar (Haryana), Pune (Maharashtra), Sanand (Gujarat) and Chennai (Tamil Nadu). They also have one R&D centre and an excellent tool room at their Noida complex. The company has been always innovating and introducing better components in their manufacturing process. They have

collaboration with M/s DENSO Corporation, Japan who are leaders in developing Mobile Air-Conditioners in Japan.

M/s Subros is now enhancing the capacity of their Noida plant to meet the increasing demand for technologically advanced type of mobile air conditioners in India. For this they need to import 6 pieces of equipment from various sources. The details of these 6 pieces of machinery are shown in the table below :

Table

S. No	Description of eqpt.	Qty	P.O No, & Date	Total amount in (FOB/CIF value)	Total CIF cost (Rs. In lacs)
1	Tooling for Nihon machine <ul style="list-style-type: none"> • Tooling for YE-3 Nihon-1 • Tooling for YL-8 Nihon-1 • V Groove Roller Ask202 (Nihon Spindle) • V-Groove Roller 3 Grooves YE-3 	1 set 1 set 5 set 5 Nos	7200000454 Dated 16.01.2013	90,00,000 /- J Yen	48,60,000/-
2	Corner Cut special Die Additional Required Parts	1 Set 1 Set	7200000455 Dated 18.01.2013	34,00,000/- J Yen	18,36,000/-
3	Case Heater Family mold <ul style="list-style-type: none"> • YL 1 RH, YAD RH & YL1/YL8 LH case Heater Family mold (with interchangeable insert) • YL 1 RH, YAD RH case Heater & case Lower Family mold (2 cavity) (with interchangeable insert) • Fan Blower Mold 1 cavity RH (YLI/YLD) -1 cavity LH (YL8/YL1) • Jig for product no. 1 • Jig for product no. 2 • Jig for product no.3 	1Set 1 set 1 set 1 set 1 set	7200000456 Dated 29.01.2013	17,29,38,150/- J Yen	9,33,86,601/-
4	Tube end Forming machine	1 Set	7200000458 Dated 26.02.2013	42,000/- USD	23,10,000/-
5	AL Auto Brazing machine	2 Nos	7200000459 Dated 20.03.2013	79,000/- USD	43,45,000/-

6	Injection Molding 1350 ADW machine	1 Nos	7200000463 Dated 01.05.2013	6,55,00,000/- J Yen	3,53,70,000/-
Total					14,21,07,601/-
Duty payable @ 7.5%					1,06,58,070.08/-

The cost of these imported equipment is Rs. 14.22 crores which will be met from their internal resources. The import duty payable on it @ 7.5% would be approximately Rs. 1.07 crores.

In their presentation before the Committee the company representative mentioned that the equipment now being imported by them, is not only for increasing the capacity of the plant but also for improving the technology for better products. For example in the aluminium brazing process they were using manual method. Now they will be introducing AUTO Brazing which will not only increase capacity from 1.2 million to 1.5 million MACs but will give uniformly braced products.

The Committee felt that since the volume of car production in the country is growing there is need for increasing the capacity of production of ancillaries like MACs of better quality for which it is essential to import the equipment listed.

The Committee noted that all the required documents have been submitted by the firm and recommended the application for duty exemption in accordance with the guidelines of the scheme.

Agenda Item No. 3 The application of **M/s Vikas Altech Pvt., Ltd.**, for duty exemption for the import of machinery needed for setting up a plant to manufacture aluminium microtubes with multiple passages cut to appropriate sizes required for manufacture of heat exchangers of Mobile air-conditioners.

M/s Vikas Altech Pvt. Ltd., is a new joint venture company, formed by Mr. Praveen Agarwal, and Mr. Abhimanyu Sharaff, Managing Directors M/s Pranav Vikas Ltd., and Mr. E.C. Lee, Managing Director of Shinwon World Trading company of South Korea. The new Joint venture company has the specific aim of starting the manufacture of Aluminium Micro tubes at

Ranjangaon, Pune in India to fulfill the need of all MAC manufacturers and other AC manufacturers in the country.

Aluminium Micro tubes have emerged as the leading technology for all heat transfer applications with non-ODS R-134a refrigerant in mobile air-conditioners. At present these are totally imported in India for manufacture of better type of heat exchangers for mobile air-conditioners by various MAC manufacturers in the country.

The manufacture of these tubes from aluminium billets is a complex process. It starts with heating the cleaned billets by eddy current heater and extrusion through a machine with properly shaped dies, testing to see that the tubes are free from pin holes, giving an anticorrosion coating of zinc metal, and winding the tubes in coil form for storage. A coil cutting machine finally straitens the tubes, forms the ends and cuts them to different sizes as and when required for condensers, evaporators, heater cores and oil coolers. The cutting machine automatically sorts tubes of different sizes for proper storing for later use.

M/s Vikas Altech Ltd., proposes to import six different machines needed for starting this work from various sources details of which along with prices are given in the table below:

TABLE

S. No.	Description of Equipment	Unit	P. O No. & Date	Price in GBP, Euro and USD	Price in INR
1	Mains Frequency Induction Billet Heating Plant, Model : I.A.S, Type: 650.5/203X1050 AI Basic equipment consisting of : Induction Heating coil, SCR power supply (Thyristor Switches) and control system with PLC along with standard accessories & spare parts. (As per details in Annex. – V)	1 set	VAPL/I/0001 Dated 28.11.2012	5,74,300/- Euro	4,14,93,175/-
2	Eddycurrent Test equipment w / test station for testing AI-Multivoid Tube/in – line for 4 strand (differential channel + Absolute channel) X 4 unit/total 8 channels includes MD+A Type Coil Oval type 12 pcs.	1 set	VAPL/I/0002 Dated 20.02.2013	2,70,000/- Euro	1,95,07,500/-

	<p>Consists of :</p> <ul style="list-style-type: none"> - Eddycurrent test equipment - 2 chX4 unit, total 8 channels, 17" touch screen - Test station with coil-cabinet, (basic space for 6 strand) - Ink-jet marking system with PLC control - Dimension measuring unit - Out cabinet w/air conditioner & UPS. - Test bench - Main Electronic accessories & spare parts <p>(As per details in Annex. – VI)</p> <ul style="list-style-type: none"> - Technical Details <p>(As per details in Annex. - VII)</p>				
3	<p>Compact 6 strand Multi-Void tube zinc Arc spraying machine set –</p> <p>Consist of:</p> <p>Compact Arcspray chamber and controls with energiser & drum mazzanine Arcspray system (8-off)</p> <p>Including spares & Accessories</p> <p>(As per details in Annex. VIII)</p>	1 set	<p>VAPL/I/0003</p> <p>Dated</p> <p>20.02.2013</p>	<p>3,01,985/-</p> <p>GBP</p>	2,53,21,442/-
4	Extrusion –				
	Extrusion press 2,750 UST 8" (ø 203)X1000L (single action, horizontal, front loader type hydraulic press)	1 unit	<p>VAPL/I/0004</p> <p>Dated</p> <p>20.02.2013</p>	<p>22,65,775/-</p> <p>USD</p>	12,49,57,491/-
	Billet brushing machine & billet lifter	1 unit			
	Dies heater (Hoist included) 2 chamber X 36kw	1 unit			
	Auto-winder (auto-tension controller & DC servo motor, reducer	4 unit			
	Water cooling booth (circulation pump & piping	1 unit			
	Dry Booth (hot jet blower & guide)	1 unit			
	Oil spray device (anticorrosion oil sprayer	1 unit			
	Additional work				
	IPMS	1 unit			
	Extrusion Press spare part 2750 UST				
	Container Tire & sleeve (8" SKD # 61 & SKT 4)	1 set			
	Stem (8" SKD # 61)	1 unit			
	Main cylinder V-packing	1 set			
	Side container, main shear cylinder packing	1 set			
	Container cartridge heater	1 set			

	(1.35kwX 36ea)				
	Die stack cartridge heater (1.2kwX22ea)	1 set			
	Fix dummy block	5 unit			
	Main pump servo valve	1 set			
	PLC (Yokogawa Japan)	1 set			
	Hydraulic Line Filter (32A)	5 unit			
	Hydraulic Line Filter (20A)	5 unit			
	Electric (addition) (As per details in Annex. IX)	1 set			
5	Tube Burst Tester : Consist of: - Burst Tester Machine - Jig/Retainer per tube size (3 sets)	1 set	VAPL/I/0005 Dated 21.02.2013	13,500 USD	7,44,525/-
6	Dual PFC Tube Cutting Machine (DMP-600-160) Consists of: Dual uncoiler, Main body, Tooling (rollers), Control cabinet, End forming unit (2 sizes), spare parts, Auto unloading of marked tube included	1 Set 1 Set 1 Set 1 Set 2 Set 1 Set	VAPL/I/0006 Dated 22.03.2013	1,40,000/- USD	77,21,000/-
Total					21,97,45,134/-
Duty payable @ 7.5%					1,64,80,885/-

The total cost of these six imported machines is approx. Rs. 22 crores and duty on it @ 7.5% would be approximately 1.65 crores.

The Committee felt that there is great need for introduction of new technology using these micro tubes in the production of heat exchangers for car air-conditioners. Since at present these are totally imported, the manufacture of aluminium micro tubes will be saving foreign exchange and give better mobile air conditioners for the country.

The Committee noted that all the required documents have been submitted by the firm and recommended the application for duty exemption in accordance with the guidelines of the scheme.

Agenda Item No. 4:

The application of M/s Global Autotech Ltd., Greater Noida (U.P) for duty exemption for import of one Teflon Coating Line for Pistons consisting of (a) coating system (125000 Pcs/month) with 8 pieces of machinery and (b) Export packing machine – one set.

M/s Global Autotech is a private limited company manufacturing among other things the pistons for MACs using non-ODS refrigerant R-134a. The pistons need lubricating with Teflon coating which is done at present by spraying a suspension of Teflon powder which is a very wasteful process and causes pollution in factory premises.

The new machine, proposed to be imported, mechanically coats the pistons by dispersive technology. The coated pistons are further sintered in a baking oven. The resulting coating of Teflon on the piston has a longer life and the process does not cause pollution in the factory atmosphere.

With the addition of proposed machine their production capacity will increase to 60,000 sets per month This will also reduce their Teflon consumption by 30%.

At present Teflon Coated pistons are imported by M/s Subros. With the installation of this machines imports of this special long lasting pistons for MACs by M/s Subros will stop.

The details of the Teflon Coating line and their cost etc is given in Table below:

Table

Sl. No	Details of Machine/Equipment	Qty	PO/LOI No & Date	Total cost FOB/CIF	Total FOB cost (Rs. in lacs)
1	Teflon Coating Line dispensing type of for Piston Model : 10S11, 10S13 & 10SA13.		GAL/PSS/IMP/1176	8,16,000/-	440.64/-
	A) Coating system (125000 pcs/month)		Dated 21.03.2013	USD	
	1. Pre-Heating Oven	1 set			

	ii. Coating Machine	1 set			
	iii. Dry-off Oven	1 set			
	iv. Baking Oven	1 set			
	v. Cool Down equipment	1 set			
	vi. Pallets (100 magazines)	100 nos			
	vii. Conveyor system	1 set			
	viii. Electrical Equipment & line control system	1 set			
Details as per Annexure X					
	B. Export packing	1 set			
Total Price					440.64
Duty Payable approx. @ 7.5%					33.048 lacs

The total cost of machinery bring imported is Rs. 440.64 lacs and duty on it @ 7.5% would be approx. 33.1 lacs. The cost will be met by internal accruals.

In their presentation before the Committee the company explained that the Teflon coating step is limiting the production of pistons and once the coating technology is improved the production of these Teflon coated pistons will increase to fulfill the need of M/s Subros who is their main customer.

The Committee felt that since Teflon coating gives a long life to piston and coating by the new dispersive method gives a better coating, reduces air pollution and reduces Teflon consumption by 30% it should be adopted.

The Committee noted that all the required documents have been submitted by the firm and recommended the application for duty exemption in accordance with the guidelines of the scheme.

Annexure – I

LIST OF PARTICIPANTS

1	Mr. H. S. Kaprwan, C-215, Sector 51, Kendriya Vihar, Noida – 200 1307 Ph : 9891597792	Member
2	Dr. Kiran Pal, Additional Director, Centre for Fire, Explosive & Environment Safety, Defence Research & Development Organisation, Ministry of Defence, Brig. S.K. Mazumdar Road, Timarpur, Delhi – 110 054	Member
3	Dr. Izzatullah, O/o DC (MSME) Ministry of Micro, Small & Medium Enterprises, Room No. 702, Nirman Bhavan, New Delhi – 110 011	Member
4	Mr. kamal Sharma, Executive Officer, CII Centre of Excellence for Sustainable Development Confederation of Indian Industry (CII), Thapar House, IInd Floor, 24, Janpath, New Delhi – 110001	Member
5	Mr. A.K. Kundalia Principal Scientist, , Council of Scientific Industrial Research (CSIR), Anusandhan Bhawan, 2, Rafi Marg, New Delhi – 110 001 Ph: 23321425, Fax No. 23710340	Special invitee
6	Ms. Devika Rani, Project Coordinator – PMU, Ministry of Environment and Forests, Core IV B, 2 nd Floor, India Habitat Centre, Lodhi Road, New Delhi – 110003	Special invitee
6	Mr. Fahad Naim Technical Officer - PMU Ministry of Environment and Forests, Core IV B, 2 nd Floor, India Habitat Centre, Lodhi Road, New Delhi – 110003	Special invitee

7	<p>Ms. Chanchal Sharma Technical Officer - PMU Ministry of Environment and Forests, Core IV B, 2nd Floor, India Habitat Centre, Lodhi Road, New Delhi – 110003</p>	Special invitee
8	<p>Prof. S.K. Mukerjee, Consultant, Ozone Cell, Ministry of Environment and Forests, Core IV B, 2nd Floor, India Habitat Centre, Lodhi Road, New Delhi – 110003</p>	Consultant
9	<p>Dr. A. Duraisamy, Director (Ozone Cell), Ministry of Environment and Forests, Core IV B, 2nd Floor, India Habitat Centre, Lodhi Road, New Delhi – 110003</p>	Member Secretary

Annexure II

M/s SRF Limited

P.O. No. SRF/DAHEJ/P1 Project/8096 dated 16.10.12

Inconel -600 Seamless Tubes for Heat Exchangers

Sl. No	Item Description	No. of Pcs	Price Pcs (GBP)	Total value (GBP)
1	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx1397 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	252	44.61	11,241.72
2	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx1187 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	394	37.9	14,932.60
3	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx2089 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	560	66.7	37,352.0
4	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx3000 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	688	95.79	65,903.52
5	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx1500 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	818	47.9	39,182.20
6	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx2540 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	518	81.1	42,009.80
7	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx2845 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	920	90.84	83,572.80
8	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx3048 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	1536	97.32	1,49,483.52
9	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx2000 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	74	68.86	5,095.64

Sl. No	Item Description	No. of Pcs	Price Pcs (GBP)	Total value (GBP)
10	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:19.05 ODX2.11 Minwalx4000 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	1415	127.72	1,80,723.80
11	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:25.4 ODX2.11 Minwalx2520 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	778	110.90	86,287.98
12	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:25.4 ODX2.11 Minwalx2200 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	572	96.82	55,381.04
13	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:25.4 ODX2.11 Minwalx1630 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	232	71.74	16,643.68
14	Seamless tube, cold drawn, pickled & annealed, MOC:SB163 UNS N06600; size:25.4 ODX2.11 Minwalx2250 MM cut length; PE, 100% ECT/Hydro, with MTC as per EN10204 TP 3.1	816	99.02	80,800.32
			Total GBP	8,68,610.62
			Total INR	7,64,37,768/

M/s SRF Limited

P.O. No. SRF/DAHEJ/7841 dated 27.09.2012

62-3M PRODUCT SPECIFICATION

Chemicals Analysis

Impurities (% w/w, Loss Free basis)

LOI at 900°C	<15.0
Total Sodium as Na ₂ O	<0.015
Total calcium as CaO	<0.15
Total Iron as Fe ₂ O ₃	<0.1
Total Nickel as NiO	<0.1
Total Zinc as ZnO	<4.0-8.0
Total Chromium (VI) as CrO ₃	<1.0

PHYSICAL CHARACTERISTICS

Form	Pellets
Size	
Diameter (mm)	4.0
Length (mm)	2.6-3.3
Strength	
Method of crushing	Horizontal
MHCS (kgf)	>3.0
Tapped Bulk Density (kg/l)	1.15 - 1.45
Surface Area (m ² /g)	>90
Pore volume (cc/g)	>0.20

Annexure IV

M/s SRF Limited
P.O. No. SRF/project/Dahej/1823 **dated** 02.01.2013

Magnetic Drive chemical process pumps

Sl. No	Item Description	Qty/Units (Nos.)	Unit price (EURO)	Total price (EURO)
1	Magnetic drive chemical pump type MNK/F, heavy duty design, PFA lined, plain bearings made of SSiC/SG +, eddy-current-free double can of CFRP/PTFE, magnetic coupling, permanent magnets of SmCo and NdFeB, impeller closed with back vanes, bare-shaft, nuts and bolts made of stainless steel, high – quality epoxy coating, inclusive test run, housing material: ductile cast iron EN-JS 1049 acc. To DIN EN1563 (0.7043 DIN 1693), technical specification to ISO 15783 and DIN ISO 5199, dimensions to DIN EN 22858/ISO 2858, flange dimensions to DIN EN 1092-2, ISO 7005-2, however flanges drilled to ASME (ANSI) B16.5 class 150, provided with long life grease lubricated bearings, housing end pressure PN 16.	2	13830.2	27660.3
2	Dry run protection, magnetic driven for pump centrifugal Sealless non-metallic, make: richter, model no: MNK/F80-50-250	2	637	1274
3	Housing Gasket, magnetic driven for pump centrifugal Sealless non-metallic, make: richter, model no: MNK/F 80-50-250, MOC :TFM 1600	1	67.1	67.1
4	Complete set of plain bearing, magnetic driven for pump centrifugal Sealless non-metallic, make: richter, model no: MNK/F80-50-250, MOC:SSiC/SG-Plus	1	1232	1232
5	Pump shaft, magnetic driven for pump centrifugal Sealless non-metallic, make: Richter, model no: MNK/F80-50-250, MOC:1.4057/PFA	1	369.6	369.6
6	Can insert, magnetic driven for pump centrifugal Sealless non-metallic, make: richter, Model no: MNK/F 80-50-250, MOC: TFM 1600	1	689.7	689.7

7	Intermediate ring can, magnetic driven for pump centrifugal Sealless non-metallic, make: richter, model no: MNK/F80-50-250, MOC: PTFE (CFK-F)	1	27.5	27.5
8	Air Freight charges up to Mumbai Airport	1	1100	1100
Total In Euro				32,420.30

M/s Vikas Altech Pvt. Ltd.,

Main Frequency Induction Billet Heating Plant

P.O. No :- VAPL/I/0001 dated 28.11.2012

Model : - I.A.S

Type :- NIB 650,5/203 X 1050 Al

(1) Basic Equipment :

Description	Qty	Unit	Price (Euro)
Induction Heating coil type NIB 650,5/203X1050 AL/T	1	Set	€ 3,70,300/-
SCR power supply (Thyristor switches) and control syste, with PLC	1	Set	
			€ 3,70,300/-

(2) Accessories :

Description	Qty	Unit	Price
Billet loading device	1	Set	€ 63,050/-
Water-re-cooling-system	1	Set	€ 32,250/-
Floor based billet handling device	1	Set	€57,850/-
Assembly material	1	Set	€ 19,450/-
			€ 1,72,600/-

(3) Spare parts :

Description	Qty	Unit	Price
Coil segment for induction heating coil	2	Pc	€ 14,100/-
Protecting tube including insulating material	1	PC	€ 4,780/-
Sliding rail	2	PC	€ 5,660/-
Thermo couple measuring system for 5 zones	1	PC	€ 6,860/-
			€ 31,400/-

Total of 1+2+3 = 3,70,300+1,72,600+31,400 = 5,74,300

M/s Vikas Altech Pvt. Ltd.,

Eddycurrent Test equipment w / test station

P.O. VAPL // 0002 dated 20.02.2013

Item No.	Description	Qty	Unit
	Main Electronic		
# EC5 5500	Basic Eddycheck 5 Tester	4	Unit
	* sample testing		
	* Amplitude evaluation		
	* Terminal Board		
# EC5 5010	Front end differential channel	4	Pcs
# EC5 5020	Front end absolute channel	4	Pcs
# EC5 5080	With alarm processor	8	Pcs
# EC5 5100	Sector evaluation	4	Pcs
# EC5 5120	Standard reporting	4	Pcs
# EC5 5550	Connection cable	4	Pcs
# EC5 3996G/10	Tranducer cable/coil cable	4	Pcs
#3952LLLS.xy	Test coil/oval type MD+A	12	Pcs
# EC5 5279	E-5 service bag	2	Pcs
# EC5 5386.G	Operating manual	2	Pcs
	Accessories		
#JT3611s	Coil holder for size 2	4	Set
#JT4560(4- 6St.)	Shifting table with guide R/L - base frame, coil cabinet - 1 st . X-Y guide Rolls (Adj. Type)X2 - 2 nd X-Y guide rolls at holderX2 - Horizontal, vertical guide rolls - Entry & exit guide rolls	1	Unit
#JT5560S	Industrial PC w/ solution w/ accessories	1	Set
#JTHPC	Printer for report	1	Pc
#JTNT 17	TFT LCD Touch screen 17" for ECT	1	Set
	- In – put remote control		
#JT2560/500	Encoder with support stand	4	Set

#JT2560/500C	Encoder with support stand, converter	4	Set
#JT3974	Warning unit (Acoustic + Optical)	1	Set
#JT3640S	Marking unit (Ink jet type)	4	Unit
	Control unit with software		
	Stand for Printer Head & ink, solvent		
# JT1800BJ	Out-cabinet for ECT	1	Set
	Air conditioner, UPS	1	Unit
#JT1200BJ	Cabinet for ECT & PLC control "Rital"	1	Unit
	w/2 x monitor, swivel arm, air-conditioner		
#JT280K	Dimension measuring unit (Japan)	4	Set
#JTIG-028	Sensor head x 4		
#JTIG-1000	Sensor controller w/amp x 4		
	Sensor braket & amp case		
	Test bench	1	Set
	Packing & T/T in land		
	Installation & Start – up	12	M/D
	Spare Parts		
	Marking printer head	1	Pc
	Marking ink	10	L/T
	Solvent	5	L/T
	Urethane coated wheel for encoder	8	Pcs
	Roller for entry & exit guide (MC Nylon)	4	Pcs
	Roller for Guide X-Y 4 pcs (Steel)	1	Set

M/s Vikas Altech Pvt. Ltd.,

Eddycurrent Test equipment w/test station Technical Details

P.O. VAPL // 0002 dated 20.02.2013

Description
Eddycurrent Testing Unit
- Eddycheck 5 Com./Each unit 2 channel (Absoute & Differencial Channel)
Software : Sector Evaluaition/Test Report & viewer
- Test Coil : Multi Differencial with Absolute
Origin & Maker : Germany / Prueftechnik NDT GmbH
Desk Top PC w/touch color moniter
Industrial PC with Accessories
IBM compatibility / OS : window XP or 7/17"
Origin : Taiwan
Marking unit
Origin & Maker : Japan/KGK
Dimension measuring unit
Up to 25mm width
Origin & maker : Japan /Keyence
Marking control
Mother material connection part (start/end)
Uncoated zinc part or bad zinc coat
Ect defect
Dimension defect
PLC control : Selectable
Mitsubishi : Melsec Q series (Japan) or Siemens 7 series
Moniter : Proface
ECT
Elect. Main power : 220V/50Hz/1 Ph, Max 5A
Air : over 5 bar Dry Air.
Fixed test station on the florr by set anchor
Color : up on request (Ral or munsell no.) basic color Navy Blue (JSNT)
Installation, Training & Start up : 4 days
We can supply test piece depends on customer spec. or request

Annexure VIII

M/s Vikas Altech Pvt. Ltd.,

Compact 6 Strand Multi-Void Tube Zinc Arc Spraying Machine

P.O. No VAPL/I/0003 dated 20.02.2013

Part No.	Description	Qty	Rate	Total (GBP)
Compact arcspray chamber and controls with energiser				£ 1,44,918.75/-
Arcspray system				£ 1,37,224.43/-
Spare pistol, energizer and supplies package				£ 15,968.09/-
7450	Arcbeam air cover	2	£107.95	£ 215.90/-
6019A	Wire Roller Assy	16	£ 33.29	£ 532.64/-
6849D	1.6mm Nozzle-Mark 5-D Type	8	£ 80.32	£ 642.56/-
6805	Clamp Pad	8	£ 30.45	£ 243.60/-
8069	10 Amp Fuse	16	£ 4.30	£ 68.80/-
7451	Arcbeam concentrator	8	£ 70.85	£ 566.80/-
7452	Arcbeam atomizer	8	£ 61.31	£ 490.48/-
6847B	1.6mm Contact Tube-Mark 3-D Type	16	£ 14.70	£ 235.20/-
2493	Solenoid valve ¾"	2	£124.63	£ 249.26/-
2312	Fuse, 3 Amp.	16	£ 4.24	£ 67.84/-
2292	Pres Sw C/W Bkt Bm/107 0-11 Bar	2	£ 74.43	£ 148.86/-
6829	Long Front wire guide	4	£ 14.81	£ 59.24/-
6828	Short front wire guide	4	£ 13.69	£ 54.76/-
1008	O' Ring	8	£ 1.43	£ 11.44/-
1007	O' Ring	8	£ 1.43	£ 11.44/-
21261C25	Wire Lub Oil Concentrate (25 ltrs)	1	£111.85	£ 111.85/-
7453	Arcbeam shroud	2	£ 77.19	£ 154.38/-
7456	O-rings	8	£ 1.17	£ 9.36/-
			Total	£ 3,01,985.68/-

Annexure IX

M/s Vikas Altech Pvt. Ltd.,

**2750 US Ton Extrusion Line
P.O. No. VAPL/I/0004 Dated 20.02.2013**

Description	Qty	Rate	Total
Extrusion shop			
Extrusion press 2750 UST 8" (203)x 1000L (Single action, horizontal, front loadertype hydraulic press)	1 unit	\$1531000.00	\$ 15,31,000/-
Billet Brusng machine & billet lifter	1 unit	\$40,000	\$ 40,000/-
Dies heater (Hoist included) 2 chamber X 36KW	1 unit	90000	\$ 90,000/-
Auto-winder (Auto-tension controller & DC servo motor, reducer	4 unit	\$82250.	\$ 3,29,000/-
Water colling booth (circulation pump & piping)	1 unit	\$32400	\$ 32,400/-
Dry booth (Hot jet blower & guide)	1 unit	\$26700	\$ 26,700/-
Oil spray device (anticorrosion oil sprayer)	1 unit	\$4600	\$ 4,600/-
Additional work			
IPMS	1 unit	\$128350	\$ 1,28,350/-
Extrusion press spare part 2750 UST			
Container tire & sleeve (8"skd#61 skt 4)	1 Set	\$32385	\$ 32,385/-
Stem (8"skd# 61)	1 unit	\$9550	\$ 9,550/-
Main cylinder V-packing	1 set	\$ 5640	\$ 5,640/-
Side container, main shear cylinder packing	1 set	\$ 1140	\$ 1,140/-
Container cartridge heater (1.35 kw X 36ea)	1 set	\$ 3270	\$ 3,270/-
Die stack cartridge heater (1.2kw X22 ea)	1 set	\$ 2000	\$ 2,000/-
Fix dummy block	5 unit	\$ 910	\$ 4,550/-
Main pump servo valve	1 set	\$4090	\$ 4,090/-
PLC (Yokogawa Japan)	1 set	\$ 4550	\$ 4,550/-
Hydraulic line filter (32A)	5 unit	\$546	\$ 2,730/-
Hydraulic line filter (20A)	5 unit	\$ 364	\$ 1,820/-
Electric (addition)	1 set	\$ 12000	\$ 12,000/-
		Total	\$ 22,65,775/-

Annexure X

M/s Global Autotech Limited

P.O. No GAL/PSS/IMP/1176 dated 21.03.2013

Specification of Piston Coating Line

Sr. No	Description	
I	Pre – Heating Oven	
1.	Type	Horizontal tunnel type
2.	Heating method	Direct heating by Far – Infrared electric heater
3	Condition	Max 100°C X 5min (pass time), Heat-up time – 30 min
4	Components	
4.1	Chamber (cabin)	
4.1.1	Type	Assemble keeping warm panel Tunnel
4.1.2	Materials : Inside	Side & Top : SPG 1.6t, Bottom : SPG 1.6t, R/W 80K 100t keep warm
4.1.3	Materials : outside	Side & Top : SPG 1.2t, Bottom : SPG 1.2t, R/W 80K 100t keep warm
4.1.4	Frame	Ls-40X40,FB-30X4
4.1.5	Main frame	Channel 100 X 50 Ls 50X5 etc
4.2	Exhaust hood	
4.2.1	Material	SPG 1.0t, 1.6t
4.2.2	Volume damper installation at in/out & exhaust hood	2 sets
4.3	Heat generator	Far infrared electric heater
4.3.1	Heat capacity	13,000kcal/Hr
4.4	Maintenance doors	2-3 places
4.5	Temp controller	Proportional control device for SCR unit (4~20mA)
4.6	SCR unit	Temp controls by current (4~20mA)
4.7	Safety device	Over heat & maintenance, emergency etc
II	Teflon Coating M/C	Accuracy: Wet condition ± 20 , dry condition ± 10
1	Basic spec	Coating M/S capacity : 360 pcs/hr unit Production capacity : 1,500 K pcs/yr (360pcs/hr X 4,200hr/yr) (125k pcs/month) Max cycle time : 10.0 sec/pcs M/C Coating thickness : O.D-65~95 Micron Wing : 25~50 Micron Coating hardness : > 2H Teflon coating materials : INOGIS & Daikin
2	Components	
2.1	Part loading, unloading unit	
2.1.1	Carrier method	Parts loading & unloading
2.1.2	Type	Coating M/C between pallet on conveyor Co-ordination servo robot – 2 sets Strock : 1000 mm Speed : 750 mm/sec
2.1.3	Others	Finger guide cylinder
2.2	Part kind confirm sensing unit	1 set

2.2.1	Type	Scale cylinder type
2.2.2	Model	CE1B12-25
2.2.3	Precision	±0.02 mm
2.3	Out diameter coating device	1 set
2.3.1	Rotating unit	Stepping motor or servo motor Speed : 0~360 rpm
2.3.2	Revision unit	Stepping motor (brake type) or servo motor Stroke : 50mm/sec, speed : 24mm/sec
2.3.3	Others	Chucking unit, L/M guide, sliding unit
2.4	Wing area coating device	1 set
2.4.1	Rotating unit	Stepping motor or servo motor Speed : 0~180 rpm
2.4.2	Travel unit	Stepping motor (brake type) or servo motor Stroke : 50mm/sec, speed : 24mm/sec
2.4.3	Others	Chucking unit, L/M guide, sliding unit
2.5	Laser measurement unit for part O.D coating thikness	1 set
2.5.1	Rotating unit	Stepping motor or servo motor Speed : 0 ~180 rpm
2.5.2	Laser unit	Measuring range : 40 mm Resolution : 0.1 um Sampling rate : 2.3 khz Repeatability : # 1 um
2.5.3	Other	2 head 1 controller slide unit
2.6	Transfer unit for station between station	1 set
2.6.1	Part transfer servo motor	Strock – 500mm Speed – 500 mm/sec
2.6.2	Others	Finger, guide cylinder, L/M etc
2.7	Dispensing pump unit	
2.7.1	For O.D coating gear pump	4 sets Materials : SUS Flow volume : 1.5 cc/sec Stepping motor : speed -0~36rpm or servo motor Dispensing valve – 6 sets Multi needle type, Teflon hose, stop valve etc
2.7.2	For wing coating gear pump	1 set Materials : SUS Flow volume : 1.5 cc/sec Stepping motor : speed -0~36rpm or servo motor Dispensing valve –2 sets Multi needle type, Teflon hose, stop valve etc
2.8	Material tank unit	4 sets
2.8.1	Capacity	20L tank
2.8.2	Material	SUS + glass
2.8.2	Accessories	Pressure and vaccum gauge, safty valve Agitator, level sensor, valves etc
2.8.3	Vaccum pump	Hydraulic rotary pump
2.8.4	Volume	240L/ min
III	Dry off oven	
1	Type	Horizontal tunnel type Conveyor 1 line
2	Heating method	Direct heating by far infrared electric heater

3	Condition	Low temp zone : 80~100°C X 25min, High temp zone : 120 ~ 150°C X 25 min pass base
4	Components	
4.1	Chamber (cabin)	
4.1.1	type	Assemble keeping warm panel tunnel
4.1.2	Materials : Inside	Side & Top : SPG 1.6t, Bottom : SPG 1.5t, R/W 80K 150t keep warm
4.1.3	Materials : Outside	Side & Top : SPG 1.0t, Bottom : SPG 1.0t, R/W 80K 150t keep warm
4.1.4	Frame	Ls-40 X 40, FB-30X4
4.1.5	Main frame	Channel 100 X 50, plate SS – 4.5t
4.2	Hood	Material – SPG 1.0t, 1.6t VR-damper installation at in/out & exhaust hood – 3 places
4.3	Heat generate unit	Type – Direct heating type Far infrared electric heater Capacity – 70,000 k/hr
4.4	Heater element	Ceramic Reflection plate – sus 0.8 t
4.5	Temp controller	Propotional control device By SCR unit (4~20mA)
4.6	Temp recorder	Digital tpe, recording 6 point
4.7	SCR unit	Temperature control, by current (4~20)
4.8	Safety device	Over heat & maintenance, emergency etc
4.9	Others	Safety fence, exhaust gas hood & Damper etc Guard room (Between dry oven and coating room) Maintenance door
IV	Baking Oven	
1.	Type	Horizontal type Conveyor : 1 line
2	Heating method	Hot air blast circulation convection type
3	Condition	Low temp zone : 180°C X 30 min, high temp zone : 240°C X 50 min pass base
4	Heat – up temp	60 min (at 10°C+ 10°C)<
5	Components	
6	Chamber	
6.1	Type	Assemble keeping warm panel tunnel
6.1.1	Materials : Inside	Side & Top : SPG 1.6t, Bottom : SPG 1.6t, R/W 80K 150t keep warm
6.1.2	Materials : Outside	Side & Top : SPG 1.0t, Bottom : SPG 1.0t, R/W 80K 150t keep warm
6.1.3	Frame	Ls-40 X 40, FB-30X4
6.1.4	Main Frame	Channel 100 X 50, Plate SS- 4.5t
6.2	Hood	Material : SPG 1.0t, 1.6t VR-damper installation at in/out & exhaust hood – 3 places
6.3	Heat generate unit	Type " hot circulation type Capacity : 115,000 kcal/hr Heater : Electric fin tube heating type
6.4	Hot air circulation fan #1	Type : R.C. fan (keep warm R/W 80k 100t) Capacity : 50CMM X 30 mm Aq (at 20°C heat proof max 300°C)
6.5	Temp & Electric control unit	Temp controller & Limiter Temp recorded Pressure anemometer s/w, saft aAw, Emergency device etc.

V	Cool down system (Forced supply & Exhaust type)		
1.	Type	Panel tunnel type	
2	Cooling method	Forced supply & exhaust type by outdoor air	
3	Functional parts		
3.1	Supply fan	Type : Air Foll fan	
		Capacity : 35 CMM X 30 mm Aq (at 20°C)	
3.2	Exhaust fan	Type : Limited lead fan	
		Capacity : 150 CMM (at 20°C)	
VI	Pallets (Magazines)		
1	Type	YS-11-P-046 (YST original for GAL)	
2	Material	Sus sch-13	
3	Size	130W x 400L x 33.5 H	
4	Loaded parts	10 pcs/Magazines	
5	Qty	100 magazines (coating dry off oven, curing zone conveyor)	
VII.	Conveyor system for the every process		
		Type : RF drive chain type	
		Speed : 0.33m/min	
1.0	Pre-heating conveyor	Drive motor : Geared motor	
		0.2kwx4px1/36x1/10	
		Spec : Frame-steel frame	
		Main chain – RF2060 Drive chain	
		Drive chain – RS#50	
2.0	Coating M/C Input conveyor	Type : Accum roller driving type	
		Speed : 8~ 10 m/min	
		Drive motor : Geared motor 200wx4px1/36	
		Accum roller : 50x2, 35l, plastic sprocket	
		Spec : Frame-AL frame, sus guide	
		Main chain – RS#40 top roller chain	
		Drive chain – RS#40	
3.0	Fork and lifer transfer unit	Type : Lift and carrier type	
		Spec : Frame-AL pro-file, sus guide	
		Up/down – rodless cylinder (stroke 350mm)	
		Carrier – rodless cylinder (stroke 275mm)	
4.0	Dry off oven	Type : RF chain deiving type (1 Line)	
		Speed : 0.12m/min (Inverter control)	
		Drive motor : Geared Motor 0.75 kwx4px1/600	
		Spec : Frame-ss41 9,12t, 100x50	
		Main chain-sus RF2080s roller chain	
		Drive chain – RS#80	
		Take up unit – Auto setting type (for heat expansion)	
5.0	Curing oven	Type : RF chain deiving type (2 Line)	
		Speed : 0.12m/min (Inverter control)	
		Drive motor : Geared Motor 1.5 kwx4px1/1200	
		Spec : Frame-ss41 9,12t, 100x50	
		Main chain-sus RF2080s roller chain	
		Drive chain – RS#80	
		Take up unit – Auto setting type (for heat expansion)	
6.0	Double speed-up conveyor	Type : RF chain deiving type	
		Speed : 0.3m/min	
		Drive motor : Geared Motor 0.4 kwx4px1/600	
		Spec : Frame-ss41 9,12t, 100x50	
		Main chain-sus RF2080s roller chain	
		Drive chain – RS#80	
7.0	Auto loader	Type : servo motor driving type (position	

		control)
		Stroke : 1500 mm
		Drive motor : 200w, speed – 1,000mm/sec
		Spec : Frame – ss 419,12t, sq-pipe, AL plate etc.
		Driving method : Timming belt drive
		Up/Down : Guide cylinder
		Rotator : Rotary cylinder
		Finger cylinder etc
8.0	Others	Diverter, home positionner, lifter, stopper unit and soon
VIII	Electrical equipment & line control system	
1.0	Control panels	Dry off oven, curing oven control panels – 1 unit Coating M/s control panel - 1 units Conveyor control panel – 1 unit O.P panel – 3 units
2.0	Panel type	Self support shut type
3.0	Operation a method	Manual / Auto drive by PLC Remote drive by touch panels Drive by converter s/w, selectors s/w push button s/w
4.0	Main components	Maker
4.1	P.L.C	Mitsubishi, Japan
4.2	Temperature sensor	YAMATAKE
4.3	Temperature recorder	YAMATAKE
4.4	Touch panel	Mitsubishi, Japan
4.5	Laser measuring unit	Opto control, Keyence
4.6	Inverter	LS
4.7	SCR unit	Para, Korea
4.8	NFB, M/s	LG
4.9	Selector S/W, SQ Lamp, P/Buttib S/W	Koino
4.10	Electric heating unit	Korea
4.11	Pneumatic parts	SMC
5.0	Wiring & Piping, Duct etc	Lapp cable, German korea