

PRICE BID FORMAT			Volume-II of NIT				
Schedule of Quantity and Rates							
Abstract of Cost							
Tender ref no.T0ATX00036 dated:14.08.2020							
PROJECT :: E&C works for Mechanical & Electrical package for 1.0 MLD Sewage Treatment Plant, HPVP Vizag							
Section No.	Item Description	Amount	Weightage %	Remark			
A	B	C	D				
1.0	Erection,testing, commissioning and painting application for equipment	Bidders not to quote here	18.4864%	As per SOQ attached at Section 1			
2.0	Supply and installation of miscellaneous items		2.0573%	As per SOQ attached at Section 2			
3.0	Fabrication, radiography, erection, testing, commissioning and painting application for piping		23.8029%	As per SOQ attached at Section 3			
4.0	Electrical & C&I Works: Installation, testing & Commissioning		47.0139%	As per SOQ attached at Section 4			
5.0	Material Handling		2.0139%	As per SOQ attached at Section 5			
6.0	Supply and installation of FPS and HVAC systems		6.5614%	As per SOQ attached at Section 6			
7.0	Installation of Structural Items for HVAC system		0.0642%	As per SOQ attached at Section 7			
Total Weightage			100.00 %				
Total amount in Figure Rs.							
Total amount in Words Rs							
Bidders should quote only the (Total Amount) both in figures & words in the specified place. They should not fill/quote/write anything in col. (C). These rates & amount will be derived based on total quoted amount and corresponding weightage rates for individual line items shown in col. (D).							
Evaluation Shall be based on total amount quoted by bidder.							
Details of Schedule of quantity (SOQ) items mentioned in respective section shall be read in Conjunction with the corresponding specification (TCC), Drawing and other terms of tender							
The rate and amount are inclusive of all applicable taxes, except for the GST. For details of taxes, clause no. 8.0 of the TCC.							

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Section 1.0: ERECTION, TESTING COMMISSIONING AND PAINTING APPLICATION FOR EQUIPMENT.

Item No.	Item Description	UOM	Qty	Weight Each (Tonnes)	Total wt in (Tonnes)
1	Raw Sewage Transfer Pumps	No.	3	0.2	0.6
2	Control Panel For Raw Sewage Lifting Pump	No.	3	0.01	0.03
3	Return Activated Sludge Lifting Pump	No.	2	0.2	0.4
4	Control Panel For Return Activated Sludge Lifting Pump	No.	3	0.01	0.03
5	Surplus Activated Sludge Pumps	No.	2	0.2	0.4
6	Control Panel For Return Activated Sludge Lifting Pump	No.	3	0.01	0.03
7	Treated Water Disposal Pumps	No.	2	0.2	0.4
8	Control Panel For Treated Water Disposal Pump	No.	2	0.01	0.02
9	Air Blowers with Acoustic Enclosures for SBR	No.	3	1.2	3.6
10	Centrifuge Feed Pumps with motor	No.	2	0.25	0.5
11	Hoist	No.			0
12	Centrifuge	No.	2	1.5	3
13	Mechanical Coarse screen	No.	1	2	2
14	Belt conveyor with motor (Coarse screen)	No.	1	0.45	0.45
15	Manual Coarse screen	No.	1	0.4	0.4
16	Mechanical Fine screen	No.	1	0.7	0.7
17	Belt conveyor with motor (Fine screen)	No.	1	0.45	0.45
18	Manual Fine screen	No.	1	0.45	0.45
19	Grit Separator equipment	No.	1	1	1
20	Organic pump (mixer type)	No.	1	0.3	0.3
21	Classifier	No.	1	0.5	0.5
22	Flow Deflectors	No.	6	0.1	0.6
23	Decanter with components such as VFD, motor with gearbox, switches	No.	2	3	6
24	Diffusers with Air pipe grid with supports, hardware, etc.,	No.	1	2.5	2.5
25	Poly electrolyte Dosing skid with pumps, tank and agitator	No.	2	1.5	3
26	Hypo Dosing skid with pumps, tank and agitator	No.	2	1	2
27	Alum Dosing skid with pumps, tank and agitator	No.	2	1.2	2.4
28	Sludge sump Agitators	No.	1	0.1	0.1
29	Local control panels	No.	6	0.1	0.6
Total Weight (Metric Ton)				29.36	
Rate= Rs/MT		Do not quote here			
Total Amount for section 1.0 (Excluding Taxes)		Do not quote here			

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Section 2.0 Supply and installation of miscellaneous items

Item No.	Item Description	UOM	Qty	Rate	Amount	Weightage %
1	Wheel Barrow of size (0.5m x 0.4m x 0.5m) or 100 litres capacity	No.	3			37.4230%
2	Channel for Mounting Agitator in Sludge sump MC 100 mm x 50mm x 6m as per IS:226	Kg	60			5.4815%
3	Solenoid Valve 25NB, Max.P-1.5 kg/cm ² , Fluid Temp-120°C	No.	2			57.0955%
Total Amount for section 2.0 (Excluding Taxes)		Do not quote here				100.0000%

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**Section 3.0: FABRICATION, RADIOGRAPHY, ERECTION, TESTING COMMISSIONING AND PAINTING
APPLICATION FOR PIPING**

Item No.	Item Description	UOM	Qty
1	DIK9 Pipes and fittings	kgs	2000
2	SS304 pipes and fittings	kgs	1000
3	MS/GI pipes and fittings	kgs	8000
4	Valves (DI,SS,MS,PVC)	kgs	1500
5	Sluice gates	kgs	5000
6	Pipe supports	kgs	2000
7	CPVC Pipes and fittings	kgs	1200
8	UPVC Pipes and fittings	kgs	500
9	HDPE Pipes and fittings	kgs	1500
10	Fabrication, welding and mounting of Hook -up items for Instruments	kgs	1000
11	structural steel	kgs	1500
Total weight(In Metric Ton)			25.20
	Rate= Rs/MT		Do not quote here
Total Amount for section 3.0 (Excluding taxes)			Do not quote here

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %
1	Installation of LT Switch Gear including Capacitor banks							
a	415 V STP MCC Double front draw out type (Dim: 7000 x 1000 x 2400), 7000Kg.	1	Nos	7000	7000			0.7573%
b	Wall mounted UPSDB (Dim: 700 x 300 x 1000), 1000Kg.	3	Nos	100	300			0.2348%
c	Local Push Button Stations (LPBS)	50	Nos	3	150			1.1739%
2	Installation of UPS System							
a	Installation of UPS system including UPS battery (Dim: 1200 x 800 x 1200), 500Kg.	1	Nos	1000	1000			0.3527%
3	Laying-of LT Power Cables							
a	Laying of LT Power cables 3Cx2.5 sq.mm. Cu XLPE, Armored	3500	mts	0.43	1505			4.6034%
c	Laying of LT Power cables 4Cx6 sq.mm. Al XLPE, Armored	1000	mts	0.51	510			1.3153%
d	Laying of LT Power cables 4Cx16 sq. mm. Al XLPE, Armored	1000	mts	0.89	890			1.6439%
e	Laying of LT Power cables 4Cx35 sq.mm. Al XLPE, Armored	250	mts	1.325	331.25			0.4366%
4	Laying of Electrical Control cables							
a	Laying of Electrical control cable (5C X1.5)sqmm Cu	3000	mts	0.5	1500			3.9458%
5	Installation of Cable Glands (Double compression Nickel plated brass)							
a	Installation of Double compression nickle plated NPT brass, weather proof cable glands for Cable Glands (Suitable for 13 to 18 mm OD of cable)	210	Nos					0.6666%
b	Installation of Double compression nickle plated NPT brass, weather proof cable glands for Cable Glands (Suitable for 18.5 to 20 mm OD of cable)	130	Nos					0.4126%

Do not quote here

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Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %	
c	Installation of Double compression nickle plated NPT brass, weather proof cable glands for Cable Glands (Suitable for 20.5 to 23 mm OD of cable)	30	Nos		210	Do not quote here		0.0952%	
d	Installation of Double compression nickle plated NPT brass, weather proof cable glands for Cable Glands (Suitable for 23.5 to 26 mm OD of cable)	10	Nos						0.0317%
e	Installation of Double compression nickle plated NPT brass, weather proof cable glands for Cable Glands (Suitable for 26.5 to 30 mm OD of cable)	10	Nos						0.0317%
f	Cable Glands (3/4" NPT)	40	Nos					0.1270%	
g	Cable Glands (1" NPT)	30	Nos					0.0952%	
6	Installation of Cable Lugs (Tinned Copper)								
a	Installation of cable lugs of 2.5 SQ.MM TINNED CU LUG	400	Nos					0.3057%	
b	Installation of cable lugs of 4 SQ.MM TINNED CU LUG	250	Nos					0.1911%	
c	Installation of cable lugs of 16 SQ.MM TINNED CU LUG	100	Nos					0.0764%	
d	Installation of cable lugs of 1.5 SQ.MM TINNED CU LUG	600	Nos					0.4586%	
e	Installation of cable lugs of 35 SQ.MM TINNED CU LUG	30	Nos					0.0229%	
f	Installation of 0.5 SQ.MM PIN TYPE LUG	150	Nos					0.1147%	
g	Installation of 1.5 SQ.MM PIN TYPE LUG	450	Nos					0.3440%	
h	Installation of 1.5 SQ.MM FORK TYPE LUG	430	Nos					0.3287%	

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %
7	Installation of Pre-fabricated GI Cable Trays & Accessories							
a	Installation of 600mm width, L=2500mm ladder type straight run cable tray along with accessories including coupler plates	25	Nos.	30	750			0.2602%
b	Installation of 300mm width, L=2500mm perforated type straight run cable tray along with accessories including coupler plates	80	Nos.	20	1600			0.9403%
c	Installation of 150mm width, L=2500mm perforated type straight run cable tray along with accessories including coupler plates	100	Nos.	15	1500			0.7936%
d	Installation of Perforated type cable tray, W=50mm, L=2500mm	50	Nos.	6	300			0.2646%
e	Installation of Cover & accessories for Perforated type cable tray, W=150mm, L=2500mm	50	Nos.	10	500			0.3968%
f	Installation of Cover & accessories for Perforated type cable tray, W=300mm, L=2500mm	20	Nos.	10	200			0.2351%
g	Installation of Cover & accessories for Perforated type cable tray, W=50mm, L=2500mm	40	Nos.	6	240			0.2117%
8	Installation of Plant earthing & lightning protection materials							
a	Installation of 75X10 GI STRIP for below ground earth mat	600	mts	6	3600			3.1641%
b	Installation of 50X6 GI STRIP for Aux. Earth Mat, Earthing of LT SWGR, DB's	300	mts	2	600			1.4382%

Do not quote here

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %
c	Installation of 25X6 GI strip for earthing of Motors 37kW & above, Lighting distribution boards, UPS DB, Storage tanks & building columns, metallic Non-Current carrying structures like stair cases, columns.	300	mts	1.4	420			1.0619%
d	Installation of 8 swg GI solid wire for earthing of motors upto 30kw, all push button stations, small equipment and instrument, hand rails/junction boxes/limit switches.	1000	mts	1	1000			1.9725%
e	Installation of 65mm dia, 3 mtr. long GI Pipe Electrode for treated earthpit.	8	nos	73	584			1.9786%
f	Installation of vertical air terminal rods for Plant earthing & lightning protection.	2	nos	25	50			0.3835%
g	Installation of 65mm dia, 3 mtr. Long Cu Pipe Electrode for PLC Elecronic earthing.	2	Nos	89	178			0.4946%
9	Installation of Plant Illumination Package							
a	Industrial type general purpose LED Batten with 2 nos. (18-20W approx, 230V AC) LED tube lamp.	14	Nos	1.5	21			0.5739%
b	Weatherproof LED batten fixture with 2 nos. (18-20W approx, 230V AC) LED tube lamp or 36W LED panel.	40	Nos	2.5	100			1.6397%
c	600X600mm LED recessed mounted fixture (60W approx. , 230V AC).	3	Nos	3	9			0.1414%
d	LED street lighting fixture (60W approx., 230V AC).	20	Nos	5	100			0.8199%
e	LED Flood lighting Fixture (200W approx., 230V AC).	3	Nos	8	24			0.1230%

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %
f	Emergency Light of installite luminaire with 10W LED lamp and necessary charging facility, auto changeover and battery back up for 2Hrs(Min).	2	Nos	2	4			0.0671%
g	Installation of 7 meter Octagonal street lighting pole	14	Nos	140	1960			5.7390%
h	Installation of 9 meter Octagonal Flood Lighting pole	1	Nos	180	180			0.4099%
i	Installation of 1200mm long 150 deg bend Pipe	7	Nos	7.5	52.5			0.3391%
j	Installation of 4 way 250x200x120mm rectangular sheet steel weather proof JB	5	Nos	2.5	12.5			0.2981%
k	Installation of Surface mounted modular switchboards	15	Nos	0.4	6			0.4472%
l	Installation of 6/16A, 230V, Surface mounted decorative type switch socket outlet with 16A piano type switch.	15	Nos	0.2	3			0.5366%
m	Installation of 20A, 230V, 1 ph, Surface/Column mounted indoor type socket outlet with 20A MCB.	2	Nos	1.5	3			0.0596%
n	Installation of 63A TPN welding receptacles with interlocked switch & Plug for safe area	2	Nos	3	6			0.0894%
o	Installation of 12 Way TPN Lighting panel (Indoor type)	2	Nos	25	50			0.1565%
p	Installation of 3 Way SPN Lighting panel (Indoor type)	1	Nos	7	7			0.0317%
q	Installation of 1Cx2.5sq.mm 1.1kV PVC insulated Cu flexible wire	4240	Mtrs.	0.03	127.2			6.4602%
r	Installation of Ceiling Fan 1200 mm	3	Nos	4	12			0.1006%
s	Supply and installation of 25mm PVC, GI rigid & flexible Conduit and accessories (bend, coupler, branching JB, saddle, ceiling rose, round block, ball socket, U-bolt for Ceiling fan etc)	1	Lot		750			1.8033%

Do not quote here

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %
t	Supply and installation of Hardwares (Nut-bolts, screws, Anchor fastners, checknuts, grommet, rawlplug, cable clamps, GI clamps and bends for fixture mounting etc)	1	Lot		175			1.8033%
10	Fabrication & Installation of Structural Steel for cable supports(including surface preparation, painting with base coat of primer and final coating)							
1	ISA-50x50x6	1.5	MT					3.9134%
2	ISMC-100	2	MT					5.2179%
11	Supply & installation of the following items:							0.0000%
a	Supply & installation of Cable tags (PVC)	200	Nos					0.0993%
b	Supply & installation of Cable Ties(1pack-100pcs)	50	Packs					1.0074%
c	Supply & installation of Cable route markers shall be made out of 100mm X 5mm GI/ aluminium plate welded / bolted on 35mm X 35mm X 6mm angle iron, 60cm long.	20	Nos					0.1011%
d	MS Chequered Plates (6mm thick, 20Sqm) for closing open trenches	942	Kg					4.7638%
e	Supply & installation of 200 mm Dia PVC Conduits	10	Mtrs					0.0280%
f	Supply & installation of 150mm dia GI conduits	120	Mtrs					2.9536%
g	Supply & installation of 50mm dia GI conduits	60	Mtrs					0.9845%
h	Supply & installation of Laminated Board for electric shock (with English, Hindi & local language)	2	Nos					0.3287%
i	Supply & installation of Board for artificial respiration	2	Nos					0.3287%
k	Supply & installation of Board displaying dos and don'ts.	2	Nos					0.3287%

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %		
I	Supply & installation of of Board displaying fire extinguishers data	2	Nos			Do not quot	Do not quot	0.3287%		
m	Supply & installation of of “No smoking” board	2	Nos							0.1027%
n	Supply & installation of of Board showing list of O&M staff with names	2	Nos							0.8217%
o	Supply & installation of of Board showing list of contact details	2	Nos							0.4109%
p	Supply & installation of of Danger boards showing Voltage level as follows									0.0000%
p.1	Supply & installation of Stickers with 415V level	20	Nos							1.0272%
p.2	Supply & installation of Metallic Boards with 415 V Level	10	Nos							0.5136%
q	First aid box with all the standard contents.	2	Nos							0.2557%
r	First aid chart made of cloth for electrical shock treatment printed in English, Hindi and Telugu duly framed with front glasses.	1	Nos							0.0053%
s	Insulating Mats-Upto 3.3kV (2.0 mm Thick)	2	Nos	30	60					0.9203%
t	Supply & installation of Fire proof sealing material for cable opening sealing(Motor Seal)	15	Sqm							2.9231%
u	Fire break coating for LT Power cables	30	Sq.mm							1.8449%
v	Testing & Commissioning of Electrical system							0.8221%		
12	Control & instrumentation Works							0.0000%		
a	Installation of DO analysers	2	Nos	10	20			0.1764%		
b	Installation of Ultra Sonic Flow meter (Clamp-on type)	1	Nos	45	45			0.0294%		
c	Installation of Ultra Sonic Level Transmitter	3	Nos	7	21			0.2645%		

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %		
d	Installation of Level Transmitter (Hydrostatic Type)	2	Nos	8	16	Do not quote here	Do not quote here	0.1764%		
e	Installation of Ultra Sonic Differential Level TX's	2	Nos	12	24					0.1764%
f	Installation of Pressure Gauges	10	Nos	1.1	11					0.4703%
g	Installation of Junction Boxes	4	Nos	20	80					0.1881%
h	Laying and termination of control cables-1P x 0.5 mm2	2000	mts	0.39	780					1.9733%
i	Laying and termination of control cables-6P x 0.5 mm2	5000	mts	0.94	4700					5.1371%
j	Installation of Cable Glands (Weatherproof) - Size- ½"	12	Nos	0.02	0.24					0.0381%
k	Installation of Cable Glands (Weatherproof) - Size- ¾"	60	Nos	0.04	2.4					0.1905%
l	Installation of Cable Glands (Weatherproof) - Size- 1-1/2"	3	Nos	0.08	0.24					0.0095%
m	Installation of Size- for 0.5 mm2 cable lugs	40	Nos	0.01	0.4					0.0306%
n	Installation of Size- for 1 mm2 cable lugs	30	Nos	0.01	0.3					0.0229%
o	Installation of Name plates/Tag plates with tying/fixing material for cable's both ends in No's	10	Nos	0.2	2					0.0050%
p	Installation of Flexible Plastic Pipe – 1.5" size in No's	5	mts	0.02	0.1					0.0040%
q	Installation of Pipe Stanchion	2	Nos	0.5	1					0.0264%
r	Installation of U Clamps-1"	10	Nos	0.02	0.2					0.0009%
s	Installation of FRP Canopies for instruments	4	Nos	0.2	0.8			0.0339%		
t	Installation of Pipe Clamp – 1"	4	Nos	0.2	0.8			0.0014%		

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Section 4.0: Electrical and C&I Works: Installation, testing & Commissioning

Item No.	Item Description	Qty	UNIT	Unit Weight (Kg.)	Total Weight (Kg.)	Unit Rate	Total Amount	Weightage %
13	Fabrication, assembly & erection of instrument supporting structures & instrument impulse line connections- str steel ms aangle (50x50x6mm), str steel ms angle (75x75x6mm), str steel 6mm plates & ISMC ms channels(100x50)	145	kg		145			0.3783%
14	Erection, installation & commissioning of PLC system for STPs in rack room & operator room along with HMI	2	Nos	300	600			5.7741%
15	Supply & installation of the following items:							0.0000%
a	ANCHOR BOLT M10X160 mm	20	Nos					0.0230%
b	SCRU HEX M10X50 P8.8	30	Nos					0.0727%
c	NUT HEX P M10-8	30	Nos					0.0048%
d	WASHER MCD 10.5-ST	60	Nos					0.0048%
e	PIPE (SMLS) A 106 Gr B 21.3X4.78 MM , SCH 80 30	48	Meter					0.7952%
f	PIPE (SMLS) SA 106 Gr. B 2" SCH 40	24	Meter					0.9597%
Total for section 4.0 (Excluding taxes)		Weight (MT)		35.031	Do not quote here	100.0000%		

Do not quote here

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Section 5.0 Material Handling

Item No.	Description	Weight(in MT)
4.0	Material handling (Receipt, unloading, Stacking & Preservation of materials, handling & loading to execution contractor's vehicle at the time of issue) including providing all necessary equipments, T&P and manpower, viz. Hydra, T&P, Consumables, Diesel, Hydra Driver, Store Keeper, Supervisor, Rigger & Helpers all complete as per instruction & direction of BHEL Engineer	
4.1	Equipments	29.36
4.2	Piping	25.20
4.3	Electrical items	35.03
4.4	HVAC	0.10
	Total	89.69
	Rate= Rs./MT	Do not quote here
	Total for section 5.0 (Excluding taxes)	Do not quote here

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Section 6.0: Supply and installation of FPS and HVAC

Sl. No	Description	QT Y	Unit	Unit Rate	Total Amount	Weightage %
1	Supply and installation of Split Type (Non-Ductable) AC of 1.5 TR Capacity	2	Nos	Do not quote here	Do not quote here	39.0575%
2	Supply and installation of 1500 CMH Propeller Type Exhaust Fan	3	Nos			9.0232%
3	Supply and installation of Portable fire extinguisher-DCP 9KG	10	Nos			51.9194%
Total for section 6.0 (Excluding Taxes)						100.00%

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Section 7.0: Installation of Structural Items for HVAC system

Sl. No.	Description	Unit	Weight Each (MT)	Qty	Total Weight (MT)	
1	Support Structures (50x50x6mm Angle)	Mtr	0.1	25	0.1	
2	Anchor fastener (10mm)	Nos	0.002	25	0.002	
Total Weight (Metric Ton)					0.102	
	Rate= Rs. /MT			Do not quote here		
	Total for section 7.0 (Excluding Taxes)			Do not quote here		