



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

CAMPUS D'ALCOI

Process to obtain organic fertilizer from wastewater

ANNEX IV: BUDGET PRESENTED BY:

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MECHANICAL ENGINEERING DEGREE

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1 INTRODUCTION

The Annex_IV includes the budget from:

1. The cleaning of the industrial plant.
2. The machinery and it's installation.
3. The compressed air installation.

2 CLEANING OF THE INDUSTRIAL PLANT

It is carried out by an external company.

Code	Measurement Unit	Description	Measure	Price (€)	Cost (€)
1		Industrial plant cleaning			
1.1	m ²	Includes the cleaning of the floor and removal of waste.	11350	0,85	9647,50
				Total:	9647,50

3 MACHINERY AND ITS INSTALLATION

	Code	Measurement Unit	Description	Measure	Price (€)	Cost (€)
2			Machinery and its installation			
2.1	Crusher	u	Model AZS-LSFS-60 with a capacity of 1 to 5 t/h and 15 kw	1	1646,50	1646,50
2.2	Mixer	u	Model M4000 with a capacity of 2 t/h and 11 kw	1	37380,00	37380
2.3	Compactor	u	Model DZJ-II 1.0 with a capacity of 1 to 2 t/h and 15 kw	1	6479,20	6479,20
2.4	Dryer	u	Model SD 60-18 with a capacity of 0,635 to 1,156 t/h and 29 kw	1	267000,00	267000
2.5	Cooler	u	Model 1.5Φx10 with a capacity ≥1 t/h and 15kw	1	65000,00	65000

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2.6	Screener	u	Model FY-GTSF-1.0x3 with a capacity of 1 to 3 t/h and 3 kw	1	2420,80	2420,80
2.7	Packaging	u	Model SJIII-K5000 with a capacity of 15 to 20 bag/min up to 1 kg and 3,5 kw	1	17800,00	17800
2.8	Baler	u	Model Technoplat 3000 with a capacity of 1500 kg and 3,5 kw	1	35000,00	35000
2.9	Pallet conveyor	u	Model Personalized with a capacity of 2000 kg and 1,0 kw	1	30000,00	30000
2.10	Forklift	u	Model Clark GTX 20 S with a capacity of 2000 kg and 26,8 kw	2	22080,01	44160,02
2.11	Pallet truck	u	Model GS with a capacity of 2200 kg	2	300,00	600
2.12	Turner	u	Model TG 201 with a capacity of 300 m ³ /h	1	15130,00	15130
2.13	Tractor	u	Model VIVID 400 with an engine power of 25,5 kw	1	17400,00	17400
2.14	Shovel tractor	u	Model Pauny PA120 with a shovel capacity of 1,2 m ³ and 64 kw	1	30082,00	30082
2.15	Blowing nozzle	u	Model 27102 MB20. Air consumption 14,5 Nm ³ /h and air pressure 6 bar	8	19,29	154,32
2.16	Hose	u	Model Ratio, 25 m long and work pressure up to 22 bar	8	25,99	207,92
2.17	Quick coupling	u	Model S1 with a 1/2" connection. Package of 10 units	1	25,49	25,49
2.18	Belt conveyor	u	Model Standard with 3,73 kw	3	14685,00	44055
2.19	Hopper	u	Model Customized with a capacity of 1 to 5 t/h and 4 kw	1	6000,00	6000
2.20	Elevator	u		1	4895,00	4895

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			Model ZH-CZ1 with a capacity up to 2,5 m ³ /h and 0,55 kw Model LS-125 with a capacity of 4,0 m ³ /h and 3,5 kw			
2.21	Endless conveyor	u		4	1780,00	7120
2.1.1	Installer	h		800	9,12	7296
2.1.2	Official 1st plumber	h		1	16,58	16,58
2.1.3	Official 1st electricity	h		2	16,58	33,16
2.1.4	Official 1st construction	h		1	15,77	15,77
2.1.5	Complementary direct costs	%		0,02	7361,51	147,23
					Total:	640064,99

4 COMPRESSED AIR INSTALLATION

	Code	Measurement Unit	Description	Measure	Price (€)	Cost (€)
3			Compressed air installation			
			Air compressor with CE marking of dimensions 620x700x800mm, 10 HP of power and 10 atm of pressure, powered by three-phase electric motor, incorporating:			
3.1	Compressor	u	regulation system, discharge valve, start-stop switch, including elastic couplings of pipe and elements of fastening, fully installed, checked and in correct operation according to the Pressure Equipment Regulations.	1	180	180

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3.1.1	Official 1st construction	h		1	15,77	15,77
3.1.2	Official 1st electricity	h		1	16,58	16,58
3.1.3	Official 1st plumber	h		1	16,58	16,58
3.1.4	Complementary direct costs	%		0,02	228,93	4,57
3.2	Brass ball valve	u	Brass ball valve, maximum pressure 25 bar, range temperature from -10 to +130 °C	1	7,76	7,76
3.2.1	Official 1st plumber	h		0,2	16,58	3,31
3.2.2	Complementary direct costs	%		0,02	11,08	0,22
3.3	Official 1st plumber	h	Electronic drain with CE mark for the elimination of condensed water, separated from compressed air, with cast iron body and stainless-steel accessories, fully installed, checked and in good working order	0,5	16,58	24,87
3.3.1	Electronic drain conx 1/2 "	u		1	279,02	837,06
3.3.2	Complementary direct costs	%		0,02	287,31	17,23

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			Vertical pressure air tank with CE marking, 270 l capacity, 500 mm diameter and 1600 mm height, built in carbon steel sheet and painted, with cylindrical shape, ellipsoidal ends and provided with openings for entry and exit of air at a pressure of 11 bar, including installation accessories, fully installed, tested and in correct operation according to the Pressure Equipment Regulations.			
3.4	Deposit compressed air 270 l	u		1	222,36	222,36
3.4.1	Accessories	u		1	100,54	100,54
3.4.2	Official 1st construction	h		10,8	15,77	170,31
3.4.3	Official 1st plumber	h		5,4	16,58	89,53
3.4.4	Complementary direct costs	%		0,02	582,75	11,65
3.5	Filter G	u	Filter intended for air treatment. Filter G, for the elimination of solid particles. .	1	350	350
3.5.1	Official 1st plumber	h		0,5	16,58	8,29
3.5.2	Complementary direct costs	%		0,02	8,29	0,16

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3.6	C Filter	u	Filter intended for air treatment. Filter C, for the elimination of solid particles, liquid water and oil aerosol.	1	350	350
3.6.1	Official 1st electricity	h		0,5	16,58	8,29
3.6.2	Complementary direct costs	%		0,02	8,29	0,16
3.7	V Filter	u	Filter intended for air treatment. V filter, with activated carbon to remove oil vapor and odours.	1	350	350
3.7.1	Official 1st plumber	h		0,5	16,58	8,29
3.7.2	Complementary direct costs	%		0,02	8,29	0,16
3.8	Air dryer	u	Cool dryer refrigerated by air with CE marking, for a flow rate of 1.07 m3 / min, a power of 0.375 HP and 16 bars of maximum working pressure, fully installed, tested and in correct operation according to CTE.	1	1265,11	1265,11
3.8.1	Official 1st electricity	h		1	16,58	16,58
3.8.2	Official 1st plumber	h		1	16,58	16,58
3.8.3	Complementary direct costs	%		0,02	1298,27	25,96
3.9	After cooler	u	Aftercooler, with a maximum working pressure of 20 bar, nominal flow to 150 l/s. All used materials under CE.	1	1099	1099
3.9.1	Official 1st electricity	h		1	16,58	16,58

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3.9.2	Official 1st plumber	h		1	16,58	16,58
3.9.3	Complementary direct costs	%		0,02	1132,16	22,64
3.10	Manual water trap	u	Air compressed water trap made by PC and aluminium. Maximum working pressure up to 10 bar and 60 °C. Maximum flow is 400 l/s.	1	17,89	161,01
3.10.1	Official 1st plumber	h		0,5	16,58	74,61
3.10.2	Complementary direct costs	%		0,02	26,18	4,71
3.11	Pipelines	u	Calibrated aluminium tube, colour RAL 5012 for air tubes. Operating limits, maximum pressure 13 bar, min and max temperatures: -20 °C to +70 °C. Designation 2810100000 - DN 20	3	72,86	218,58
3.11.1	Accessories	u		1	230,13	230,13
3.11.2	Official 1st plumber	h		16	16,58	265,28
3.11.3	Complementary direct costs	%		0,02	713,99	14,27
					Total:	6241,39

5 TOTAL COST

Code	Description	Cost
1	The cleaning of the industrial plant.	9647,50
2	The machinery and it's installation.	640064,99
3	The compressed air installation.	6241,38
Total:		655953,87