



Cost Estimate :		Warmtecentrale Loppersum			
Subject :		+/-25% begroting			
Project Name:		Warmtecentrale Loppersum			
Client:		Gemeente Eemsdelta			
Currency:		EUR			
Author:		Checked by:	RTUW	Order no.	55682.10
Revision:	B	Date:	22/07/2022	Document no.	7422003
Office:	100	Department:	373	Docum. status	for review

		Total Equipment						
COST CODE		MAT'L COST EUR	LABOUR COST EUR	SUBC./INDIR. COST EUR	TOTAL COST EUR	INDICATIVE MHRS	R E V	REMARKS
A EQUIPMENT								
15xx	Plumbing - Gas Installations	-	-	-	-			connection not included
213x	Package units Warmtepomp	434.000	-	13.000	447.000			
212x	Tanks	68.000	-	26.000	94.000			
241x	Pumps	76.000	-	7.000	83.000			
2460	Vul- expansie & ontgasunit	8.000	-	1.000	9.000			
2912	Appendages	14.000	-	151.000	165.000			
0	0	-	-	-	-			
A	TOTAL EQUIPMENT	600.000	-	198.000	798.000			
B BULK MATERIALS & SUBCONTRACTS								
25xx	Equipment Erection	-	-	-	-			incl in equipment
13xx	Total Civil	-	-	651.000	651.000			
15xx	HVAC	-	-	23.000	23.000			
16xx	Fire Fighting	-	-	12.000	12.000			
26xx	Leiding werk	-	-	199.000	199.000			
41xx	Electrical	-	-	80.000	80.000			
43xx	Instrumentation & control	-	-	144.000	144.000			
		-	-	-	-			
B	TOTAL BULK MATERIALS & SUBCONTRACTS	-	-	1.109.000	1.109.000			
A-B	TOTAL DIRECT COSTS (TDC)	600.000	-	1.307.000	1.907.000			
C SERVICES & OTHER INDIRECTS								
71xx	Services	-	-	-	-			
711x	Conceptual Engineering	-	-	-	-			incl in basic engineering
								Ontvangen PO, gebaseerd op engineering t/m bouwvraag
712x	Basic Engineering	-	-	57.500	57.500			inschatting
712x	Bestek en aanbestedingstukken	-	-	25.000	25.000			
713x	Detail Engineering	-	-	-	-			incl in EPCm services
713x	EPCm services 15%	-	-	286.000	286.000			inschatting
713x	Construction Management Services	-	-	-	-			incl in EPCm services
713x	Project Management Services	-	-	-	-			incl in EPCm services
713x	Safety	-	-	-	-			
714x	As-Built	-	-	4.000	4.000			inschatting
80xx	Indirect costs	-	-	-	-			
801x	Spare Parts	-	-	-	-			uitgesloten
801x	Temporary Site Facilities	-	-	10.000	10.000			stelpost
802x	Start-up & Commissioning	-	-	-	-			uitgesloten
802x	Training	-	-	-	-			uitgesloten
802x	Vendor Representatives	-	-	-	-			uitgesloten
802x	NOBO / PED / ATEX / CE costs / Certificates	-	-	-	-			uitgesloten
802x	Cleaning	-	-	-	-			uitgesloten
803x	Permits, Fees & Legal 3%	-	-	20.000	20.000			3% van civiele kosten
803x	Insurance / Construction All Risk (CAR) 0,65%	-	-	12.000	12.000			0,65% van directe kosten
804x	Miscellaneous Indirects	-	-	-	-			uitgesloten
00xx	Client Costs	-	-	-	-			uitgesloten
xxxx	Other	-	-	-	-			
C	TOTAL SERVICES & OTHER INDIRECTS	-	-	415.000	415.000			
A-C	TOTAL DIRECT + INDIRECT COSTS	600.000	-	1.722.000	2.322.000			
D&E CONTINGENCY & ESCALATION								
7411	Escalation 5%	30.000	-	86.000	116.000			indexatie Q2-2021-Q2-2022
7411	Escalation 5%	32.000	-	90.000	122.000			uitvoering 2023
7412	Contingency on Costs 22%	132.000	-	379.000	511.000			FEL index
D&E	TOTAL CONTINGENCY & ESCALATION	194.000	-	555.000	749.000			
A-E	TOTAL INSTALLED COSTS	794.000	-	2.277.000	3.071.000			
F ADDITIONAL COSTS								
90xx	Additional Costs	6000		3000	9000			Afronding
F	TOTAL ADDITIONAL COSTS	6000	0	3000	9000			
A-F	GRAND TOTAL	800.000	-	2.280.000	3.080.000			

				Regel invoegen		Cost Estimate :		Warmtecentrale Loppersum											
				Delete regel		Subject :		Total Civil											
						Cost code		13xx											
						Project Name:		Warmtecentrale Loppersum											
						Client:		Gemeente Eemdelta											
				Author: SCTS		Checked by: -		Order No. 55682.10											
				Revision: B		Date: 22/07/2022		Doc. No. 7422003											
				Office: 100		Department: 313		Document status for review											
Rev.	Costcode	ITEM	Description	Qty	Unit	Material			Labour			Subcontractors/Indirect					TOTAL	Remarks	
	MAIN	SUB	NO		[Lot]	cost/unit [EUR]	Design [%]	total costs [EUR]	hour/unit [no]	total hours [hours]	Hour rate [EUR/hr]	Factors %	total costs [EUR]	cost/unit [EUR]	costs [EUR]	S/C Indirects Gen.cst [%]	cost [EUR]	COST [EUR]	
			gebouwafmeting					-					-		-			-	
			L	10	m			-					-		-			-	
			B	12	m			-					-		-			-	
			A	120	m2			-					-		-			-	
			Ontgravingen					-					-		-			-	
			Bovenlaag	168	m3			-					12		2.016		2.016	2.016	
			Grondverbetering & backfill	119	m2			-					12		1.426		1.426	1.426	
			Afvoeren vrijgekomen grond	168	m3			-					6		1.008		1.008	1.008	
			Fundaties (funderingsbalken)	120	m2			-					206		24.720		24.720	24.720	
			palen					-					-		-			-	
			mobilisatie	1	sum			-					5150		5.150		5.150	5.150	
			palen fundex gebouw	18	pce			-					3090		55.620		55.620	55.620	aangenomen draagvermogen 300kN
			palen plaat buffertanks+warmtepompen (buiten opstelling) 1 paal per 9m2	15	pce			-					3090		46.350		46.350	46.350	aangenomen draagvermogen 300kN
			Staalconstructie					-					-		-			-	
			staalconstructie tbv versterken dak voor plaatsen zonnetermie	1.575	m2			-					60		94.500		94.500	94.500	Stelpost, er is nog geen onderzoek gedaan
			Bovenbouw					-					-		-			-	
			Vloer gebouw	120	m2			-					145		17.400		17.400	17.400	300mm beton op zand
			Vloer opstelling buffertanks, warmtepompen (buitenopstelling)	135	m2			-					145		19.575		19.575	19.575	300mm beton
			Afwerkvloer - cementdekvloer	120	m2			-					42		5.040		5.040	5.040	
			Buitenmuren	264	m2			-					78		20.592		20.592	20.592	buitenmuren in HSB incl. isolatie
			staal	16.645	kg			-					3,5		58.258		58.258	58.258	
			Gevelbekleding buitenmuren	264	m2			-					26		6.864		6.864	6.864	gemod hout
			Binnenwanden	150	m2			-					62		9.300		9.300	9.300	HSB met gips
			Binnendeuren - beganegrond	3	stuks			-					1339		4.017		4.017	4.017	
			Buitendeuren - enkel	1	stuks			-					1648		1.648		1.648	1.648	
			Buitendeuren - dubbel	3	stuks			-					3090		9.270		9.270	9.270	
			Dakconstructie (Hout)	120	m2			-					78		9.360		9.360	9.360	
			Dakisolatie	120	m2			-					26		3.120		3.120	3.120	60mm
			Dakbedekking	120	m2			-					78		9.360		9.360	9.360	EPDM
			Geluidswand	1	sum			-					50000		50.000		50.000	50.000	Stelpost, geen informatie nog beschikbaar over m2 en materiaal gebruik, kosten van vergelijkbaar project
			Supporting staal leidingwerk & kabelgoten	1	lot			-					1030		1.030		1.030	1.030	nvt.
			Aarding	120	m2			-					52		6.240		6.240	6.240	
			Riolering en afvoer	1	lot			-					10300		10.300		10.300	10.300	
			Terreinafwerking	1	lot			-					12875		12.875		12.875	12.875	Stelpost
			Zonnepanelen	0	lot			-					20600		-		-	-	in later stadium bij te plaatsen, na controle dak
			Design allowance	10%	%			-					485038		48.504		48.504	48.504	
SUBTOTAL								-					-		533.542		533.542	533.542	

Brown field factor	1.00							0	-> additional labour for brown field
Other mark-ups	10%					53.354	53.354		
General costs contractor	7%					37.348	37.348		
Profit and risk contractor	5%					26.677	26.677		
TOTAL	-	-	-	-	-	651.000	651.000		<- to the summary sheet

Regel invoegen Delete regel				Cost Estimate :		Warmtecentrale Loppersum													
				Subject :		Leiding werk													
				Cost code		26xx													
				Project Name:		Warmtecentrale Loppersum													
				Client:		Gemeente Eemdelta													
				Author: 0		Checked by: RTUW				Order No. 55682.10									
				Revision: B		Date: 22/07/2022				Doc. No. 7422003									
				Office: 100		Department: 373				Document status for review									
Rev.	Costcode	ITEM	Description	Qty	Unit	Material			Labour				Subcontractors/Indirect			TOTAL	Remarks		
	MAIN	SUB	NO		[Lot]	cost/unit	Design	total costs	hour/unit	total hours	Hour rate	Factors	total costs	cost/unit	costs	S/C Indirects	cost	COST	
						[EUR]	%	[EUR]	[no]	[hours]	[EUR/hr]	%	[EUR]	[EUR]	[EUR]	Gen.cst (%)	[EUR]	[EUR]	
			Gas leidingen					-		-			-		-		-	-	
			Leidingwerk in gebouw					-		-			-		-		-	-	
			uitgangspunten					-		-			-		-		-	-	
			Equipment items	2	pcs			-		-			-		-		-	-	
			Gemiddelde diameter DN80					-		-			-		-		-	-	
			Gemiddeld lengte leidingwerk per equipment	6	mtr			-		-			-		-		-	-	
			Totale lengte leidingwerk gebouw	12	mtr			-		-			-	365	4.380		4.380	4.380	CS, eenheidsprijs materiaal en arbeid, incl bochten, T-stukken, inbouwtijd afsluiters volgens DACE type A
			Equipment connection	2	pcs			-		-			-	600	1.200		1.200	1.200	aanname
								-		-			-		-		-	-	
			CV leidingen					-		-			-		-		-	-	
			Leidingwerk in gebouw					-		-			-		-		-	-	
			Uitgangspunten					-		-			-		-		-	-	
								-		-			-		-		-	-	
			Equipment items	14	pcs			-		-			-		-		-	-	2 LT warmtepompen, 2 HT verdamper, 2 HT concensor, 2 ketels, 1 expansie vat, 1 pompset, 2 buffertank, 1 zonnethermie, 1 nood aansluiting
			Gemiddelde diameter DN80					-		-			-		-		-	-	
			Gemiddeld lengte leidingwerk per equipment	22	mtr			-		-			-		-		-	-	
			Totale lengte leidingwerk gebouw	308	mtr			-		-			-	365	112.420		112.420	112.420	CS DN80; aanvoer 6m, retour 6m
			Equipment connection	14	pcs			-		-			-	600	8.400		8.400	8.400	
								-		-			-		-		-	-	
			Isolatie	20%	perc			-		-			-	126400	25.280		25.280	25.280	
			Design allowance					-		-			-		-		-	-	
			Design allowance	10%	%			-		-			-	126.400	12.640		12.640	12.640	
								-		-			-		-		-	-	
								-		-			-		-		-	-	
SUBTOTAL								-		-			-		164.320		164.320		
Brown field factor				1.00														0	-> additional labour for brown field
Other mark-ups				6%											9.859			9.859	
General costs contractor				9%											14.789			14.789	
Profit and risk contractor				6%											9.859			9.859	
TOTAL					-			-		-			-		199.000		199.000		<- to the summary sheet

				Regel invoegen		Delete regel		Cost Estimate :		Warmtecentrale Loppersum									
								Subject :		Electrical									
								Cost code		41xx									
								Project Name:		Warmtecentrale Loppersum									
								Client:		Gemeente Eemdelta									
				Author: 0		Checked by: RTUW		Order No. 55682.10											
				Revision: B		Date: 22/07/2022		Doc. No. 7422003											
				Office: 100		Department: 373		Document status for review											
Rev.	Costcode	ITEM	Description	Qty	Unit	Material		Labour		Subcontractors/indirect		TOTAL		Remarks					
MAIN	SUB	NO			[Lot]	cost/unit [EUR]	Design [%]	total costs [EUR]	hour/unit [no]	total hours [hours]	Hour rate [EUR/hr]	Factors %	total costs [EUR]	cost/unit [EUR]	costs [EUR]	S/C Indirects Gen.cst [%]	cost [EUR]	COST [EUR]	
			Plot area																
			GFA total	120	m2 GFA														
			Connection																
			De eenmalige aansluiting van een MS-D aansluiting op het 10 KV netwerk.																
			Aansluiting 800 kVA MS-D op het 10 KV netwerk.	0	lot														kosten voor aansluiting niet in kostenraming opgenomen
			High voltage power																
			Transformers trafo	0	pce														huur, niet opgenomen in kostenraming
			Low voltage power																
			Main distribution cabinet	1	pce									20000	20.000		20.000	20.000	
			Distribution cabinet lighting	1	pce									2000	2.000		2.000	2.000	
			Distribution cabinet power	1	pce									2000	2.000		2.000	2.000	
			Distribution cabinet emergency power	0	pce									7500	-		-	-	
			Distribution cabinet UPS power	0	pce									7500	-		-	-	
			Feeder cables large pumps	7	pce									1500	10.500		10.500	10.500	
			Feeder cables small pumps	14	pce									125	1.750		1.750	1.750	
			Cable trays	50	m1									60	3.000		3.000	3.000	
			Power outlet WCD 230/16 double 1 per 20 m2 GFA	6	pce									35	210		210	210	
			Power connection WCD 230/16 1 per 50 m2 GFA	2	pce									35	84		84	84	
			Power connection lighting 1 per 25 m2 GFA	5	pce									20	96		96	96	
			Power outlet 400/16 single 1 per 100 m2 GFA	1	pce									70	84		84	84	
			Power connection 400/16 1 per 100 m2 GFA	1	pce									70	84		84	84	
			Electrical cables 230/16 outlets 15 m1 per connect.	198	m1									5	990		990	990	
			Electrical cables 400/16 outlets 40m1 per connect.	15	m1									15	225		225	225	
			Lighting																
			Lighting fixtures 1 per 12,5 m2	10	pce									325	3.120		3.120	3.120	
			Cables Lighting	150	m1									5	750		750	750	
			switches/connections to BMS 1 switch per 5 fixtures	2	pce									40	77		77	77	
			Earthing / lightning protection																
			Earthing	120	m1									10	1.200		1.200	1.200	
			Earthing connection	23	pce									100	2.300		2.300	2.300	
			Reference earthing	1	pce									2500	2.500		2.500	2.500	
			Lightning protection	150	m1									10	1.500		1.500	1.500	
			Emergency lighting																
			Central UPS emergency lighting		sum														
			Emergency lighting fixtures 1 per 75 m2	5	pce									275	1.375		1.375	1.375	
			Emergency fixtures 1 per 75 m2	4	pce									275	1.100		1.100	1.100	
			Switches/connections to BMS		pce									40	-		-	-	
			Data & telecommunication																not applicable

				-		-	65.939	65.939	
SUBTOTAL									
Brown field factor	1,00							0	-> additional labour for brown field
Other mark-ups	6%					3.956	3.956		
General costs contractor	9%					5.935	5.935		
Profit and risk contractor	6%					3.956	3.956		
		-		-		-	80.000	80.000	<- to the summary sheet
TOTAL									

