ILC PROJECT

CONVENTIONAL FACILITIES

Site independent
Site dependent

WORK BREAK DOWN STRUCTURE

				Area systems							
				x.1 e- source	x.2 e+ source	x.3 DR	x.4 RTML	x.5 Main Linac	x.6 BDS	x.7 OTHER(S)	TOTAL
x.0			**Conventional Facilities**								
x.x.1			**CIVIL ENGINEERING**								
	x.x.1.1		In house engineering								
	x.x.1.2		Outsourced Consultancy services								
	x.x.1.3		Geological and geotechnical investigations								
	x.x.1.4		Site establishment								
		x.x.1.4.1	Contractor, Consultant and Employer facilities								
		x.x.1.4.2	Access roads and others								
	x.x.1.5		Underground structures								
		x.x.1.5.1	Shafts								
		x.x.1.5.2	Tunnels								
		x.x.1.5.3	Experimental halls								
		x.x.1.5.4	Service caverns								
		x.x.1.5.5	Miscelaneous underground works								
	x.x.1.6		Surface structures								
		x.x.1.6.1	Concrete service buildings								
		x.x.1.6.2	Steel service buildings								
		x.x.1.6.3	Control and office buildings								
		x.x.1.6.4	Technical galleries								
		x.x.1.6.5	Concrete slabs								
	x.x.1.7		Other surface works								
		x.x.1.7.1	Modification to existing structures								
		x.x.1.7.2	Drainage (clear and waste water) and oil separators								
		x.x.1.7.3	Roads and car parks								
		x.x.1.7.4	Landscaping and fencing								
			Total x.x.1								
x.x.2	x.x.2		**ELECTRICAL EQUIPMENT**								
	x.x.2.1		In house engineering								
	x.x.2.2		Outsourced Consultancy services								
	x.x.2.3		High voltage equipment, energy transport								
		x.x.2.3.1	Main Substation								
		x.x.2.3.2	Substation								
		x.x.2.3.3	Transforming unit								
	x.x.2.4		Low voltage equipment, energy distribution								
	x.x.2.5		Cabling and optical fibers								
	x.x.2.6		Safe power sources								
	x.x.2.7		Network, monitoring and surveillance (Central Control system)								
			Total x.x.2								
x.x.3			**AIR TREATMENT EQUIPMENT**								
	x.x.3.1		In house engineering								
	x.x.3.2		Outsourced Consultancy services								
	x.x.3.3		Heating Ventilation and Coooling systems and distribution network								
	x.x.3.4		Pressurisation systems and ductwork								

	x.x.3.5		Smoke extraction systems and ductwork									
			Total x.x.3									
x.x.4			**WATER COOLING AND WATER SUPPLY EQUIPMENT**									
	x.x.4.1		In house engineering									
	x.x.4.2		Outsourced Consultancy services									
	x.x.4.3		Primary stations									
		x.x.4.3.1	Cooling towers and pumping stations									
		x.x.4.3.2	Primary stations and piping									
	x.x.4.4		Secondary stations									
		x.x.4.4.1	Demineralised water stations and distribution piping									
		x.x.4.4.2	Chilled water stations and distribution piping									
		x.x.4.4.3	Mixed water stations and distribution piping									
		x.x.4.4.4	Compressed air									
	x.x.4.5		Water supply equipment									
		x.x.4.5.1	Water supply and plumbing networks									
		x.x.4.5.2	Water treatment plant									
			Total x.x.4									
x.x.5			**HANDLING EQUIPMENT**									
	x.x.5.1		In house engineering									
	x.x.5.2		Outsourced Consultancy services									
	x.x.5.3		Lifts									
	x.x.5.4		Electrical overhead travelling cranes									
	x.x.5.5		Hoists									
	x.x.5.6		Auxiliary lifting equipment									
	x.x.5.7		Road transport and handling equipment									
	x.x.5.8		Underground transport equipment									
			Total x.x.5									
x.x.6			**COMMUNICATION EQUIPMENT**									
	x.x.6.1		In house engineering									
	x.x.6.2		Outsourced Consultancy services									
	x.x.6.3		Telephon networks									
	x.x.6.4		Informatic networks									
	x.x.6.5		Public adress and others									
			Total x.x.6									
x.x.7			**SAFETY EQUIPMENT**									
	x.x.7.1		In house engineering									
	x.x.7.2		Outsourced Consultancy services									
	x.x.7.3		Safety alarm systems									
	x.x.7.4		Safety access control systems									
	x.x.7.5		Fire fighting systems									
	x.x.7.6		Other safety equipment									
			Total x.x.7									
x.x.8			**SURVEY AND ALIGNMENT**									
	x.x.8.1		In house engineering									
	x.x.8.2		Outsourced Consultancy services and R&D work									
	x.x.8.3		Geodesy and networks									
	x.x.8.4		Positioning of the components									
	x.x.8.5		As built measurements and integration									
	x.x.8.6		Metrology for the final focus areas									
	x.x.8.7		Metrology for the detectors and experiement areas infrastructure									
			Total x.x.8									

x.x.	x.x.	x.x.	**TOTAL CFS**										

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