
















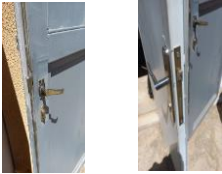







































#	Description	Quantity	Unit	Picture	Unit cost	Total cost
Location 1: Kfarzabad Solar Pumping Station						
1.2.1	Supply and install a chlorination pump (IP 65, 12 W, 230 V, 8 bars, 5 L/h, EU Origin)	1	PC			
1.2.2	Supply and install a chlorination system tank mixer (Motor should be of type vertical fixed and will be mounted at the top of the mixer tank, the shaft will go down through the top to the mixer tank. The length of the shaft will be about 0.5 m. EU Origin)	1	PC			
1.2.3	Fix the connection between the two chlorination tanks	1	LS			
1.2.4	Supply two plastic chlorine containers of 10 kg each	2	PC			
1.3	Supply string trimmer for grass removal (Heavy duty, >50 cc quick start gasoline engine, >40 cm cutting width)	1	PC			
1.4	Supply and install 5 ball tap valves of 1/2 in each (EU Origin)	5	PC			
1.5	Supply and install 3 inches gate valve (brass or equivalent, EU Origin)	3	PC			
1.6	Supply 2 padlocks of 100mm 4" heavy duty stainless steel armored padlock anti-theft including 3 keys	2	PC			
1.7.1	Supply 1 Hoe (heavy duty, large metal blade > 7 in., wood handle)	1	PC			
1.7.2	Supply 1 Pickaxe (heavy duty, 36 inches L x 21 inches W x 2.75 inches D, tool head weighs 5 lbs, wood handle)	1	PC			
1.7.3	1 Shovel (heavy duty)	1	PC			
1.8	Roof of the technical room waterproofing. Including treating of roof surface properly (surface cleaning, dirt/debris removal) and then applying a waterproofing material layer (Polyurethane, EU origin). The estimated area of the roof is 10 m ² .	10	m ²			
Location 2: Al Maslaha Baalbeck solar water station						
2.1	Supply and install 2 batteries of lead acid type (storage capacity 200 Ah, 12 V), and all needed accessories (35 mm ² DC cable, fixing connections)	2	PC			
2.2	Replacement (Supply and install) of 10 PV panels of 320 Wp (550 Wp Tier 1 PV panels are preferred if 320 Wp are not available)	10	PC			
2.3	Supply string trimmer for grass removal (Heavy duty, >50 cc quick start gasoline engine, >40 cm cutting width)	1	PC			
2.4	Supply and install 40 meters AC cable 4x125mm ² and all needed accessories (MTS 400 A, terminal electrical connections, fixing items, protection...) to connect EDL electricity to the diesel generator panel board. AC cable should be installed underground as per the international electrical codes. The final layer can be concrete instead of asphalt. "Protection" includes needed circuit breaker(s), rain water and dust protection for the MTS, IP65 Panel board or equivalent (protection small technical room according to the size of the device(s))	1	LS			
2.5	Supply 2 padlocks of 100mm 4" heavy duty stainless steel armored padlock anti-theft including 3 keys	2	PC			
Location 3: Assayra #10 Baalbeck solar water station						
3.1	Supply and install 2 batteries of lead acid type (storage capacity 200 Ah, 12 V), and all needed accessories (35 mm ² DC cable, fixing connections)	2	PC			
3.2	Replacement (Supply and install) of 12 PV panels of 320 Wp (550 Wp Tier 1 PV panels are preferred if 320 Wp are not available)	10	PC			








#	Description	Quantity	Unit	Picture	Unit cost	Total cost
3.3	Supply and install three phase 400 A contactor (S-N400, IEC/EN 60947-4-1, VDE 0660, Ith 450 A, AC-3, continuous current rating 400 A)	1	PC			
3.4	Supply and install of 5 electric relays industrial R4N type (Contacts: 4 CO; rated load AC1 - 7 A/230 V AC; coils AC or DC; for plug-in sockets and PCB; mechanical indicator, LED (option); test button)	5	PC			
3.5	Supply 3 padlocks of 100mm 4" heavy duty stainless steel armored padlock anti-theft including 3 keys	3	PC			
Location 4: Assayra #12 Baalbeck solar water station						
4.1	Supply and install 2 batteries of lead acid type (storage capacity 200 Ah, 12 V), and all needed accessories (35 mm ² DC cable, fixing connections)	2	PC			
4.2	Replacement (Supply and install) of 14 PV panels of 320 Wp (550 Wp PV panels Tier 1 are preferred if 320 Wp are not available)	14	PC			
4.3	Supply and install three phase 400 A contactor (S-N400, IEC/EN 60947-4-1, VDE 0660, Ith 450 A, AC-3, continuous current rating 400 A)	1	PC			
4.4	Supply and install of 5 electric relays industrial R4N type (Contacts: 4 CO; rated load AC1 - 7 A/230 V AC; coils AC or DC; for plug-in sockets and PCB; mechanical indicator, LED (option); test button)	5	PC			
4.5	Supply 2 padlocks of 100mm 4" heavy duty stainless steel armored padlock anti-theft including 3 keys:	2	PC			
Location 5: Al Maslakh Baalbeck solar water station						
5.1	Addition of (Supply, install, connect to existing plant, and commission) 16 PV panels (550 Wp Tier 1 PV panels are preferred if 320 Wp are not available) with their steel structure and all needed accessories (Galvanized G90 type, to withstand wind speed of 120 km/h and snow load)	16	PC			
5.2	Supply and install of 5 electric relays industrial R4N type (Contacts: 4 CO; rated load AC1 - 7 A/230 V AC; coils AC or DC; for plug-in sockets and PCB; mechanical indicator, LED (option); test button)	5	PC			
5.3	Supply 3 padlocks of 100mm 4" heavy duty stainless steel armored padlock anti-theft including 3 keys	3	PC			
5.4	Supply and install 2 door locks (figure 5.1 below)	2	PC			
5.5	DN150 mm / PN16 gate valve to be replaced by new ones with same specifications (Metal type for water use, EU origin)	1	PC			
5.6	DN90 mm gate / PN16 valve to be replaced by new ones with same specifications (Metal type for water use, EU origin)	1	PC			
Location 6: Douris Baalbeck solar water station						
6.1	Supply and install 2 batteries of lead acid type (storage capacity 200 Ah, 12 V), and all needed accessories (35 mm ² DC cable, fixing connections)	2	PC			

#	Description	Quantity	Unit	Picture	Unit cost	Total cost
6.2	Replacement (Supply and install) of 8 PV panels of 320 Wp (550 Wp Tier 1PV panels are preferred if 320 Wp are not available)	8	PC			
6.3	Supply string trimmer for grass removal (Heavy duty, >50 cc quick start gasoline engine, >40 cm cutting width)	1	PC			
6.4	Supply and install three phase 400 A contactor (S-N400, IEC/EN 60947-4-1, VDE 0660, Ith 450 A, AC-3, continuous current rating 400 A)	1	PC			
6.5	Supply and install of 5 electric relays industrial R4N type (Contacts: 4 CO; rated load AC1 - 7 A/230 V AC; coils AC or DC; for plug-in sockets and PCB; mechanical indicator, LED (option); test button)	5	PC			
6.6	Supply 2 padlocks of 100mm 4" heavy duty stainless steel armored padlock anti-theft including 3 keys	2	PC			
Location 7: Brital Baalbeck solar water station						
7.1	Supply and install 2 batteries of lead acid type (storage capacity 200 Ah, 12 V), and all needed accessories (35 mm ² DC cable, fixing connections)	2	PC			
Location 8: Serine Baalbeck solar water station						
8.1	Supply and install 2 batteries of lead acid type (storage capacity 200 Ah, 12 V), and all needed accessories (35 mm ² DC cable, fixing connections)	2	PC			
Location 9: Nabi Chit Baalbeck solar water station						
9.1	Supply and install 4 batteries of lead acid type (storage capacity 200 Ah, 12 V), and all needed accessories (35 mm ² DC cable, fixing connections)	4	PC			
10: General Equipment for Solar Water Stations						
10.1	Supply safety helmet x 10	10	PC			
10.2	Supply piezometer with accessories length 300 m for measuring boreholes water level (Audible indicator/Buzz, visual indicator, tape type with markings, SS probe type, simple to use, robust and compact design, high accuracy)	1	PC			
10.3.1	Supply DC Fuse 25 A 1000 V DC (EU origin)	5	PC			
10.3.2	Supply DC Fuse 20 A 1000 V DC (EU origin)	5	PC			
10.3.3	Supply DC Fuse 15 A 1000 V DC (EU origin)	5	PC			

#	Description	Quantity	Unit	Picture	Unit cost	Total cost
10.4.1	Supply DC Circuit Breaker 2P 20 A 600 VDC (EU origin)	5	PC			
10.4.2	Supply DC Circuit Breaker 2P 125 A (EU origin)	5	PC			
10.5.1	Supply AC Circuit Breaker 2P 6 A (EU origin)	5	PC			
10.5.2	Supply AC Circuit Breaker 2P 10 A (EU origin)	5	PC			
10.5.3	Supply AC Circuit Breaker 2P 20 A (EU origin)	5	PC			
10.5.4	Supply AC Circuit Breaker 2P 32 A (EU origin)	5	PC			
10.5.5	Supply AC Circuit Breaker 4P 10 A (EU origin)	5	PC			

#	Description	Quantity	Unit	Picture	Unit cost	Total cost
10.5.6	Supply AC Circuit Breaker 4P 25 A (EU origin)	5	PC			
10.6	Supply DC Surge Arrestor Type I+II, 2P, VDC 1000, Up 2.5 kV, response time < 25 ns, with indicator window (EU origin)	5	PC			
10.7	Supply AC Surge Arrestor SPD Type I+II 1000 V (EU origin)	5	PC			
10.8	Electrical cable junctions and terminals					
10.8.1	Supply Copper electrical terminal 150 mm (Cosse électrique)	20	PC			
10.8.2	Supply Copper electrical terminal 120 mm (Cosse électrique)	20	PC			
10.8.3	Supply Copper electrical terminal 90 mm (Cosse électrique)	20	PC			
10.8.4	Supply Copper electrical terminal 50 mm (Cosse électrique)	20	PC			
10.8.5	Supply Aluminum electrical terminal 120 mm (Cosse électrique)	20	PC			
10.8.6	Supply Aluminum electrical terminal 90 mm (Cosse électrique)	20	PC			
10.8.7	Supply Electrical terminal 150 mm (Cosse électrique femelle isolée)	20	PC			
10.8.8	Supply Electrical terminal 120 mm (Cosse électrique femelle isolée)	20	PC			
10.9	Supply Circuit Breaker 4P 120 A (EU or Japanese origin)	1	PC			

#	Description	Quantity	Unit	Picture	Unit cost	Total cost
10.10	Supply Circuit Breaker 4P 150 A (EU or Japanese origin)	1	PC			
10.11	Supply Circuit Breaker 4P 250 A / or 220 A (EU or Japanese origin)	1	PC			
10.12	Supply Circuit Breaker 4P 400 A (EU or Japanese origin)	1	PC			
11.1	Supply Contactor 3P 120 A (EU or Japanese origin)	2	PC			
11.2	Supply Contactor 3P 150 A (EU or Japanese origin)	2	PC			
11.3	Supply Contactor 3P 180 A (EU or Japanese origin)	2	PC			
12	Supply Phase relay 3 phases (EU origin)	2	PC			

#	Description	Quantity	Unit	Picture	Unit cost	Total cost
13	Supply Timer seconds (EU origin)	2	PC			
14	Supply Timer minutes (EU origin)	2	PC			
15	Supply Level relay (EU origin)	2	PC			
16.1	Supply Thermal relay 100 A (EU origin)	2	PC			
16.2	Supply Thermal relay 120 A (EU origin)	2	PC			
16.3	Supply Thermal relay 150 A (EU origin)	2	PC			
16.4	Supply Thermal relay 250 A (EU origin)	2	PC			

#	Description	Quantity	Unit	Picture	Unit cost	Total cost
16.5	Supply Thermal relay 300 A (EU origin)	2	PC			
17.1	Supply AC Copper Cable Single Core flexible 90 mm2	25	M			
17.2	Supply AC Copper Cable Single Core flexible 50 mm2	25	M			
18	Supply Motor temperature sensor/switch control display (EU origin)	2	PC			