

Request for Proposals (RFP) for Implementation of Renewable Energy & Energy Efficiency (REEE) Measures in Six (6) Local Communities, One (1) CSO, and Seventeen (17) MSMEs in Lebanon

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Annex 3: Preliminary Design

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Prepared by the Lebanese Center for Energy Conservation (LCEC)

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I. General Notes

1. The sections of this Annex describe the contractor's scope of work in each site of each lot.
2. The presented images are indicative only. The contractor shall propose its own layout of the listed solutions.
3. The contractor shall be responsible of the electrical and structural designs of each system based on the below mentioned systems sizing.
4. The contractor shall abide by the locations specified for the installation of the REEE measures.
5. All obstacles affecting the performance of the PV systems shall be taken into consideration in the contractors' design, as they might affect the guaranteed performance ratio mentioned in Form 6 of the RFP.
6. All PV systems shall be equipped with a bypass component for maintenance purposes.

II. Lot 1 - Preliminary Design

1. The REEE measures to be implemented at the municipal sites under Lot 1 are as follows:

Table 1: Lot 1 REEE measures – Local Communities

Site	Type of Solution	Description	Notes:
Municipality of Kfeir	Solar Pumping	<p>PV system size: ≥ 250 kWp</p> <p>Total power rating of variable frequency drive(s) for each pump: ≥ 125 kVA</p>	<p>PV system to be installed on the unbuilt land located next to the pumping station, as well as on the rooftop of the station, as indicated in images below.</p> <p>Solar inverter(s) to be installed under the PV structure in a protective enclosure, as per Annex 6.</p> <p>PV system to be enclosed within a fenced area with limited access.</p> <p>Solar pumping system to power the submersible pump via AC connections between the solar pumping inverter(s) and the electrical room.</p>
Municipality of Miemes	Solar Pumping	<p>PV system size: ≥ 111 kWp</p> <p>Total power rating of variable frequency drive(s): ≥ 110 kVA</p>	<p>PV system to be installed on unbuilt land located next to the pumping station as indicated in images below.</p> <p>Solar inverter(s) to be installed under the PV structure in a protective enclosure, as per Annex 6.</p> <p>PV system to be enclosed within a fenced area with limited access.</p>

			Solar pumping system to power the submersible pump via AC connections between the solar pumping inverter(s) and the electrical room.
Municipality of Hasbaya	Solar PV + Storage	<p>PV system size: ≥ 81 kWp</p> <p>Hybrid inverter(s) power rating: ≥ 100 kVA</p> <p>Battery bank size: ≥ 120 kWh</p>	<p>PV panels to be installed on unbuilt land as indicated in the images below.</p> <p>Inverter(s) and batteries to be installed next to the PV panels, housed in a secure, well-ventilated prefabricated room.</p> <p>The prefabricated room and all PV panels to be enclosed within a fenced area with limited access.</p> <p>AC output of the hybrid inverter(s) to be connected to the existing municipal generators network located in an adjacent land. Automatic transfer switching is required between the existing source and the PV source.</p> <p>The AC input of the hybrid inverter(s) to be fed by the existing municipal generators network.</p> <p>One pole to be installed next to the PV field for the AC cable connection. An existing electricity pole located next to the generators can be used for the AC cable installation.</p>

2. The REEE measures to be implemented at the CSO site under Lot 1 are as follows:

Table 2: Lot 1 REEE Measures – CSO Site

Site	Type of Solution	Description	Notes:
EKF GROWW Facility	Solar PV + Storage	PV system size: ≥ 18 kWp Hybrid inverter size: ≥ 20 kVA Battery bank size: ≥ 30 kWh	PV panels to be installed on the rooftop of the EKF GROWW facility, as indicated in the images below. Inverter and batteries to be installed inside the facility next to existing electrical panelboards.

3. The REEE measures to be implemented at the MSME sites under Lot 1 are as follows (refer to Annex 7 for site photos):

Table 3: Lot 1 REEE Measures – MSME Sites

Site	Type of Solution	Description	Notes:
Mount Hermon for Thyme - Al Kfeir <i>Coordinates:</i> 33.435000, 35.733028	Upgrade of Existing PV System	Existing system: <ul style="list-style-type: none"> 5 x 575 Wp Jinko PV Panels 4 kW, 24VDC inverter 2 x 240 Ah, 12V tubular batteries New components to be added: <ul style="list-style-type: none"> 3 x PV Panels, compatible with the existing 2 x tubular batteries compatible with the existing 	Building Height: ~ 9m PV Panels Location: Rooftop Inverter Location: Ground Floor PV Panels to Inverter distance: ~ 30m Inverter to Connection Point distance: same location The contractor shall install new PV panels connected to the same array as the existing panels. The contractor shall replace the existing cables installed between the existing PV panels and the inverter with PV cables as per Annex 6.

			<p>The contractor shall install the two new batteries in parallel with the existing ones.</p> <p>The new PV panels shall be ground-mounted adjacent to the existing structure.</p> <p>The contractor shall install a new earthing system for the PV system.</p>
<p>Al Raghad Bakery – Ain Kinia</p> <p><i>Coordinates:</i> 33.398768, 35.707429</p>	<p>Upgrade of Existing PV System</p>	<p>Existing system:</p> <ul style="list-style-type: none"> • 4 x 545 Wp Longi PV Panels • 3 kW, 24 VDC inverter • 2 x 200 Ah, 12V tubular batteries <p>New components to be added:</p> <ul style="list-style-type: none"> • 3 x PV Panels, compatible with the existing • 4 x tubular batteries compatible with the existing 	<p>Building Height: ~ 10m PV Panels Location: Rooftop Inverter Location: Ground Floor (to be relocated to another room on the same floor) PV Panels to Inverter distance: ~ 15m Inverter to Connection Point distance: ~ 20m</p> <p>The contractor shall install new PV panels connected to the same array as the existing panels.</p> <p>The contractor shall replace the existing cables installed between the existing PV panels and the inverter with PV cables as per Annex 6.</p> <p>The contractor shall install each two new batteries in parallel with the existing ones.</p>

			<p>The new PV panels shall be ground-mounted adjacent to the existing structure.</p> <p>The contractor shall install a new earthing system for the PV system.</p>
<p>Laiterie Fares – Kawkaba</p> <p><i>Coordinates:</i> 33.388457, 35.645308</p>	<p>Upgrade of Existing PV System</p>	<p>Existing system:</p> <ul style="list-style-type: none"> • 8 x 545 Wp Longi PV Panels • 3.5 kW, 24 VDC inverter • 3 x 200 Ah, 26 V lithium batteries <p>New components to be added:</p> <ul style="list-style-type: none"> • 4 x PV Panels, compatible with the existing • 8 kW single-phase hybrid inverter • 15 kWh lithium battery bank 	<p>Building Height: ~ 12m PV Panels Location: Rooftop Inverter Location: Upper Staircase PV Panels to Inverter Location distance: ~ 20m Inverter to Connection Point distance: ~ 30m</p> <p>Contractor shall disconnect the existing inverter and battery bank, currently located in the basement, from the PV system.</p> <p>Contractor shall dismantle the existing PV structures on the rooftop and replace them with a single south-oriented elevated steel structure.</p> <p>The new and existing PV panels shall be installed on the new steel structure.</p> <p>The existing and new PV panels along with the new lithium battery shall be connected to the new hybrid inverter.</p>

			<p>The new inverter and battery shall be installed in a designated area on the upper staircase.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed in a nearby garden ~ 30m away from the connection point.</p>
<p>Abu Ghaida Trading – Hasbaya (Olive Press)</p> <p><i>Coordinates:</i> 33.401707, 35.664918</p>	<p>Installation of On-grid PV System</p>	<p>PV system size: 30 kWp</p> <p>On-grid inverter(s) power rating: 30 kW, three-phase</p>	<p>Building Height: ~ 9m</p> <p>PV Panels Location: Rooftop of the small olive press</p> <p>Inverter(s) Location: Next to the mounting structure</p> <p>Connection Point Location: Next to the diesel generator</p> <p>PV panels shall be installed on an elevated steel structure at the rooftop of the small olive press.</p> <p>The contractor shall install an electrical panel adjacent to the 200 kVA diesel generator, enclosed within a waterproof steel panel board. This electrical panel shall serve as the interface between the diesel generator and the on-grid PV system (Connection Point).</p> <p>A fuel-saving controller / PLC shall be installed next to the Connection Point.</p>

			<p>The AC terminal(s) of the on-grid inverter(s) shall be connected to the Connection Point as specified in Annex 6.</p> <p>The contractor shall route communication cables between the on-grid inverter(s), the fuel-saving controller, and the diesel generator in accordance with Annex 6.</p> <p>Contractor shall install a new earthing system for the PV system. Earthing rods to be installed near the buildings ~ 30m away from the connection point.</p>
<p>Farouj Al Kamal – Hasbaya (Poultry)</p> <p><i>Coordinates:</i> 33.401278, 35.677778</p>	<p>Installation of Hybrid PV System with Storage</p>	<p>PV system size: 10.2 kWp</p> <p>Hybrid inverter power rating: 10 kW, single-phase</p> <p>Battery bank capacity: 17.5 kWh</p>	<p>Building Height: ~ 10m PV Panels Location: Rooftop Connection Point Location: Electrical Room (Ground Floor)</p> <p>PV panels shall be installed on an elevated steel structure at roof level.</p> <p>Hybrid inverter and battery bank to be installed next to the Connection Point.</p> <p>Contractor shall install a new earthing system for the PV system.</p>

<p>Manahel Al Hamra – Hasbaya (Beekeeping)</p> <p><i>Coordinates:</i> 33.398332, 35.679454 (Building under construction)</p>	<p>Installation of Hybrid PV System with Storage</p>	<p>PV system size: 3.3 kWp</p> <p>Hybrid inverter power rating: 5 kW, single-phase</p> <p>Battery bank capacity: 5 kWh</p>	<p>Building Height: ~ 4m PV Panels Location: Rooftop Inverter Location: Ground Level</p> <p>PV panels shall be installed on an elevated steel structure at roof level.</p> <p>Hybrid inverter and battery bank to be installed in a dedicated technical room under the rooftop.</p> <p>Contractor shall install a new earthing system for the PV system. Earthing rods to be installed in a nearby garden ~ 30m away from the connection point.</p>
<p>Al Jood Al Aseel – Hasbaya (Dairy)</p> <p><i>Coordinates:</i> 33.403426, 35.669664</p>	<p>Installation of Hybrid PV System with Storage</p>	<p>PV system size: 12 kWp</p> <p>Hybrid inverter power rating: 12 kW, single-phase</p> <p>Battery bank capacity: 30 kWh</p>	<p>Building Height: ~ 4.5 m PV Panels Location: Rooftop Inverter Location: Under the Staircase Connection Point Location: On EDL Pole near the building Inverter to Connection Point distance: ~ 25m</p> <p>PV panels shall be installed on an elevated steel structure at roof level.</p> <p>Hybrid inverter and battery bank to be installed under the staircase.</p> <p>AC output and AC input of the hybrid inverter(s) shall be connected to the Connection Point as per Annex 6.</p>

			Contractor shall install a new earthing system for the PV system. Earthing rods to be installed ~ 20m away from the connection point.
Doctors Farm – Al Mary (Solar Pumping) <i>Coordinates:</i> 33.299768, 35.635416	Installation of Solar Pumping System	PV system size: 30 kWp	PV Panels Location: Unbuilt Land VFD Location: Under the PV structure Connection Point Location: Electrical Room inside the Pump House PV Panels to Connection Point distance: ~ 300m PV panels shall be installed on an existing PV structure. VFD to be installed under the PV structure inside a waterproof steel panel board, as per Annex 6. Solar pumping system to power the 25 HP submersible pump via new AC connections to be installed between the solar pumping inverter and the Connection Point. Contractor shall install a new earthing system for the PV system next to the PV panels.

4. Indicative images of Kfeir site in Lot 1:



Figure 1: Kfeir PV Site – Indicative Top View

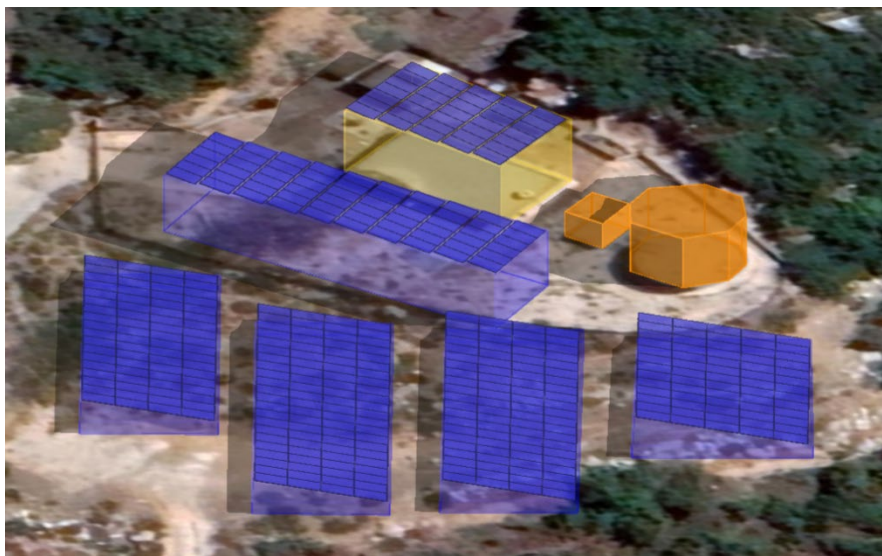


Figure 2: Kfeir PV Site – Indicative Side View

5. Indicative images of Miemes site in Lot 1:



Figure 3: Miemes PV Site – Indicative Top View

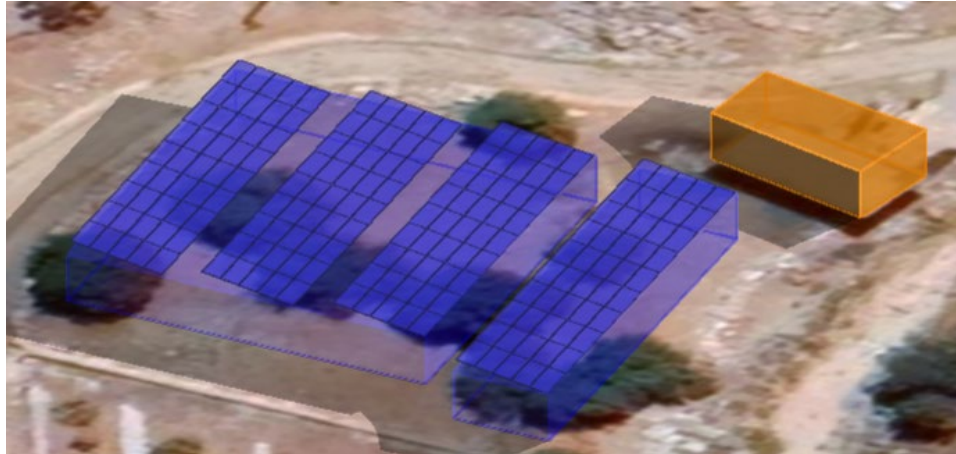


Figure 4: Miemes PV Site – Indicative Side View

6. Indicative images of Hasbaya site in Lot 1:



Figure 5: Hasbaya PV Site – Site Plan



Figure 6: Hasbaya PV Site – Indicative Top View

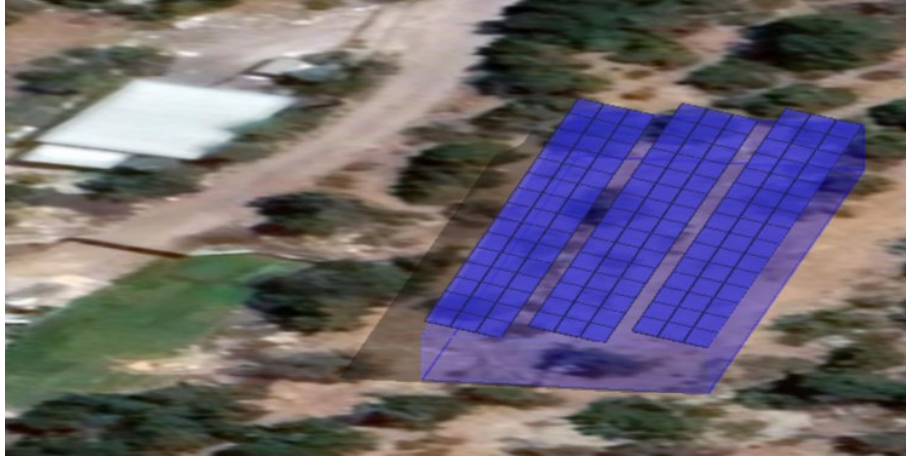


Figure 7: Hasbaya PV Site – Indicative Side View

7. Indicative images of EKF site in Lot 1:

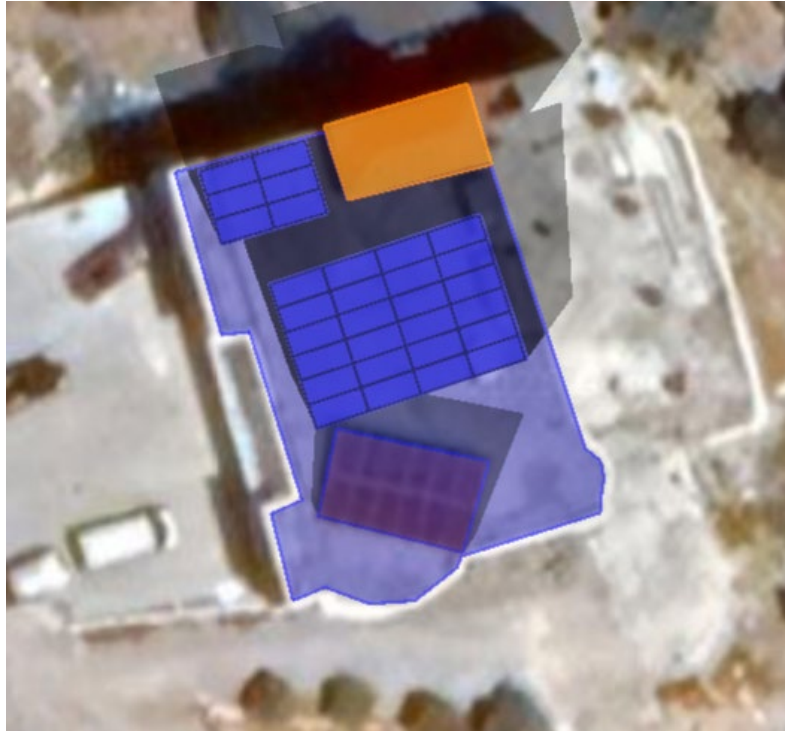


Figure 8: EKF GROWW Facility – Indicative Top View

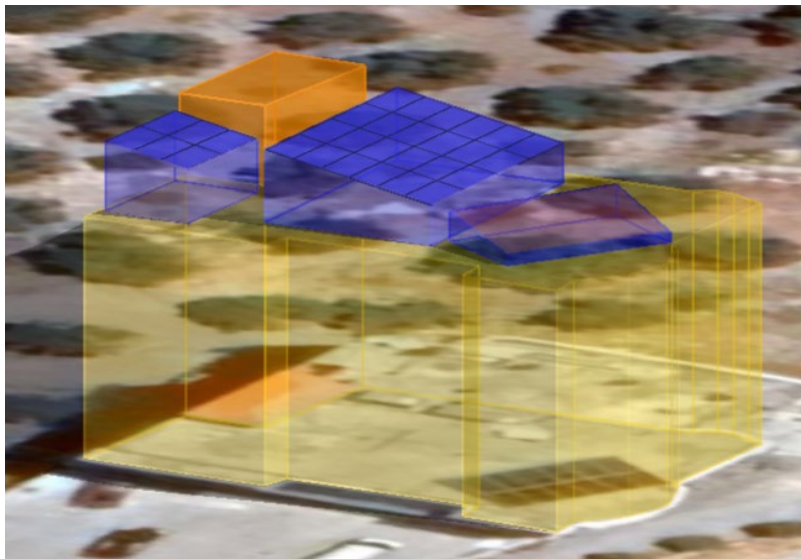


Figure 9: EKF GROWW Facility – Indicative Side View

III. Lot 2 - Preliminary Design

1. The REEE measures to be implemented at the municipal sites under Lot 2 are as follows:

Table 4: Lot 2 REEE measures – Local Communities

Site	Type of Solution	Description	Notes:
Municipality of Taraya	Solar Pumping	<p>PV system size: ≥ 132 kWp</p> <p>Total power rating of variable frequency drive(s): ≥ 120 kVA</p>	<p>PV system to be installed on unbuilt land located next to the pumping station as indicated in images below.</p> <p>Solar inverter(s) to be installed under the PV structure in a protective enclosure, as per Annex 6.</p> <p>PV system to be enclosed within a fenced area with limited access.</p> <p>Solar pumping system to power the submersible pump via AC connections between the solar pumping inverter(s) and the electrical room.</p>
Municipality of Sawiri	Solar Pumping	<p>PV system size: ≥ 270 kWp</p> <p>Total power rating of variable frequency drive(s): ≥ 220 kVA</p>	<p>PV panels to be installed on empty terrain owned by the municipality.</p> <p>The location of the PV installation area with respect to the pump electrical room is shown in the images below.</p> <p>Solar inverter(s) to be installed under the PV structure in a protective enclosure, as per Annex 6.</p> <p>PV system to be enclosed within a fenced area with limited access.</p>

			<p>Solar pumping system to power the submersible pump via AC connections between the solar pumping inverter(s) and the electrical room.</p> <p>AC cables to be installed on existing poles.</p>
Municipality of Kherbet Qanafar	Solar Pumping	<p>PV system size: $\geq 150 \text{ kWp}$</p> <p>Total power rating of variable frequency drive(s): $\geq 120 \text{ kVA}$</p>	<p>PV system to be installed on unbuilt land located next to the pumping station as indicated in images below.</p> <p>Solar inverter(s) to be installed under the PV structure in a protective enclosure, as per Annex 6.</p> <p>PV system to be enclosed within a fenced area with limited access.</p> <p>Solar pumping system to power the submersible pump via AC connections between the solar pumping inverter(s) and the electrical room.</p>

2. The REEE measures to be implemented at the MSME sites under Lot 2 are as follows (refer to Annex 7 for site photos):

Table 5: Lot 2 REEE measures – MSMEs

Site	Type of Solution	Description	Notes:
Shawaf Farms – Dairy & Processing Facility <i>Coordinates:</i> 33.978306, 36.168111	Upgrade of Existing PV System	<p>Existing system:</p> <ul style="list-style-type: none"> 54 x 545 Wp PV Panels 2 x 12 kW three-phase hybrid inverter 2 x 17.5 kWh Lithium batteries <p>New components to be added:</p> <ul style="list-style-type: none"> 13.2 kWp total PV array power 12 kW three-phase hybrid inverter 17.5 kWh lithium battery bank 	<p>Building Height: ~ 10m PV Panels Location: Rooftop Inverter Location: Entrance of Building PV Panels to Inverter distance: ~ 30m Inverter to Connection Point distance: same location</p> <p>The new PV panels shall be partially ground-mounted adjacent to the existing structures, and partially flush mounted on an existing TOT structure on the rooftop.</p> <p>The new inverter and battery bank shall be installed in parallel with the existing inverters and battery bank.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed in a nearby garden ~ 50m away from the connection point.</p>
Rayan's Farm CO – Food Processing Facility	Installation of On-grid PV System	<p>Existing system:</p> <ul style="list-style-type: none"> 60 x 540 Wp PV Panels 	<p>Building Height: ~ 6m PV Panels Location: Rooftop Inverter Location: Electrical Room (Ground Floor) PV Panels to Inverter distance: ~ 20m</p>

<p><i>Coordinates:</i> 33.991476, 36.035344</p>		<ul style="list-style-type: none"> • 3 x 12 kW three-phase hybrid inverter • 8 x 280 Ah/ 12V Gel batteries <p>New components to be added:</p> <ul style="list-style-type: none"> • 21 kWp total PV array power <p>50 kW three-phase on-grid inverter(s)</p>	<p>Inverter to Connection Point distance: same location Generator to Connection Point distance: ~ 20m</p> <p>New PV panels shall be installed on an elevated structure at an existing canopy adjacent to the rooftop.</p> <p>Contractor shall disconnect the existing inverter and battery bank, currently located in the electrical room, from the PV system.</p> <p>Contractor shall install the new on-grid inverter inside the electrical room.</p> <p>A fuel-saving controller / PLC shall be installed next to the Connection Point, which consists of an ATS controlling the transfer between the 80 kVA three-phase diesel generator and the EDL supply, with an 80 A three-phase meter.</p> <p>The AC terminal(s) of the on-grid inverter(s) shall be connected to the Connection Point as specified in Annex 6.</p> <p>The contractor shall route communication cables between the on-grid inverter(s), the fuel-saving</p>
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			<p>controller, and the diesel generator in accordance with Annex 6.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed in a nearby garden ~ 30m away from the connection point.</p>
<p>Manara Dairy – Dairy Processing Facility</p> <p><i>Coordinates:</i> 33.660979, 35.883691</p>	<p>Upgrade of Existing PV System</p>	<p>Existing system:</p> <ul style="list-style-type: none"> • 448 x 450 Wp PV Panels, 48 x 550 Wp PV Panels • 4 x 50 kW three-phase hybrid inverter • 40 x 5 kWh Lithium batteries <p>New components to be added:</p> <ul style="list-style-type: none"> • 10.8 kWp total PV array power • 50 kW three-phase hybrid inverter(s) 50 kWh Lithium battery bank 	<p>PV Panels Location: Unbuilt Land Inverter Location: Newly installed prefabricated room near the PV structures Connection Point Location: Electrical Room inside the Ground Floor of Factory PV Panels to Connection Point distance: ~ 500m (existing cables already installed by the owner)</p> <p>New PV panels shall be installed on an existing steel structure near the existing PV structures.</p> <p>The new inverter and battery bank shall be installed in parallel with the existing inverters and battery bank.</p> <p>AC connections shall run between the new inverters and the existing totalizer in the prefabricated room, which is already connected to the Connection Point.</p>

<p>Abdelkhalek Mill – Grain Milling Facility</p> <p><i>Coordinates:</i> 33.565783, 35.716999</p>	<p>Installation of On-grid PV System</p>	<ul style="list-style-type: none"> • PV system size: 5.4 kWp • Inverter power rating: > 5 kW, three-phase • Inverter mode of operation: Capable of operating both on-grid and off-grid with a battery bank in case installed at a later stage 	<p>Building Height: ~ 7.5m PV Panels Location: Rooftop Inverter Location: Ground Floor PV Panels to Inverter distance: ~ 40m Inverter to Connection Point distance: same location</p> <p>The PV panels shall be installed on an elevated steel structure at roof level.</p> <p>The AC input of the on-grid inverter(s) shall be connected to the Connection Point, which consists of an ATS controlling the transfer between the 45 kVA three-phase diesel generator and the three-phase EDL supply.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed in a nearby garden ~ 30m away from the connection point.</p>
<p>SunCode – Agro-Food Facility</p> <p><i>Coordinates:</i> 33.897386 36.021650</p>	<p>Installation of Hybrid PV System with Storage</p>	<p>PV system size: 8.4 kWp</p> <p>Hybrid inverter power rating: 8 kW, single phase</p> <p>Lithium battery bank capacity: 12.5 kWh</p>	<p>Building Height: ~ 17m PV Panels Location: Rooftop Inverter Location: Ground Floor PV Panels to Inverter distance: ~ 40m Inverter to Connection Point distance: ~ 20m</p> <p>The PV panels shall be installed on an elevated steel structure at roof level.</p>

			<p>The new inverter and battery bank shall be installed near the connection point on the ground floor.</p> <p>The AC terminals of the inverter shall be connected to the Connection Point, which is an electrical panel board containing the facility's main circuit breaker, located in a nearby warehouse on the Ground Floor.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed near the building ~ 30m away from the connection point.</p>
<p>Wadi Al Horr – Agro-Food Enterprise</p> <p><i>Coordinates:</i> 33.904432, 35.996618</p>	<p>Installation of Hybrid PV System with Storage</p>	<p>PV system size: 12 kWp</p> <p>Hybrid inverter power rating: 12 kW, single phase</p> <p>Battery bank capacity: 12.5 kWh</p>	<p>Building Height: ~ 3m PV Panels Location: Rooftop Inverter Location: Ground floor Connection Point Location: ATS located on Ground Floor PV Panels to Inverter distance: ~ 40 Inverter to Connection Point distance: ~ 20m</p> <p>The PV panels shall be installed on the TOT roof canopies, ensuring compliance with all stability and durability requirements.</p> <p>The new inverter and battery bank shall be installed inside a TOT room</p>

			<p>adjacent to the Connection Point (ATS).</p> <p>The AC terminals of the inverter shall be connected to the Connection Point, which includes and ATS and MTS located in a separate room on the Ground Floor.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed ~ 20m away from the connection point.</p>
<p>Berad Saraain – Cold Storage Facility</p> <p><i>Coordinates:</i> 33.878507, 36.074369</p>	<p>Installation of On-grid PV System</p>	<p>PV system size: ~ 12 kWp</p> <p>On-grid inverter power rating: 12 kW, three-phase</p>	<p>Building Height: ~ 12m PV Panels Location: Rooftop Inverter Location: Electrical Room, Ground floor Connection Point Location: Same Room PV Panels to Inverter distance: ~ 30m Generator to Connection Point distance: ~ 50m</p> <p>The PV panels shall be installed on an elevated steel structure at roof level.</p> <p>The AC terminal of the on-grid inverter(s) shall be connected to the Connection Point, which consists of an electrical panel board linked to an 85 kVA diesel generator.</p>

			<p>The contractor shall install a fuel saving controller / PLC to manage PV injection into the Connection Point.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed ~ 50m away from the connection point.</p>
<p>Harba Trading – Cold Storage Facility</p> <p><i>Coordinates:</i> 33.889731, 36.000463</p>	<p>Installation of Hybrid PV System with Storage</p>	<p>PV system size: 12 kWp</p> <p>Hybrid inverter power rating: 12 kW, three-phase</p> <p>Battery bank capacity: 30 kWh</p>	<p>Building Height: ~ 9m PV Panels Location: Rooftop Inverter Location: Wall mounted, Ground floor Connection Point Location: Ground Floor</p> <p>The PV panels shall be installed on an existing steel structure at roof level.</p> <p>The AC terminal of the hybrid inverter shall be connected to the Connection Point, which consists of an ATS controlling the transfer between the 75 kVA three-phase diesel generator and the three-phase EDL supply rated at C63 x 4P.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed near the building ~ 40m away from the connection point.</p>

<p>El Rida Beekeeping</p> <p><i>Coordinates:</i> 33.894526, 35.990586</p>	<p>Installation of Hybrid PV System with Storage</p>	<p>PV system size: 12 kWp</p> <p>Hybrid inverter power rating: 12 kW, three-phase</p> <p>Battery bank capacity: 15 kWh</p>	<p>Building Height: ~ 6m</p> <p>PV Panels Location: Rooftop</p> <p>Inverter Location: Ground Floor of Facility</p> <p>Connection Point Location: Same location</p> <p>PV Panels to Inverter distance: ~ 40m</p> <p>The PV panels shall be installed on an elevated steel structure at roof level.</p> <p>The Connection Point shall be a Manual Transfer Switch (MTS), to be installed by the contractor, to control the transfer between the PV system and the generator subscription.</p> <p>The AC terminals of the hybrid inverter shall be connected to the Connection Point.</p> <p>The contractor shall install a new earthing system for the PV system. Earthing rods to be installed in a garden next to the inverter room.</p>
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3. Indicative images of Taraya site in Lot 2:



Figure 10: Taraya PV Site – Indicative Top View

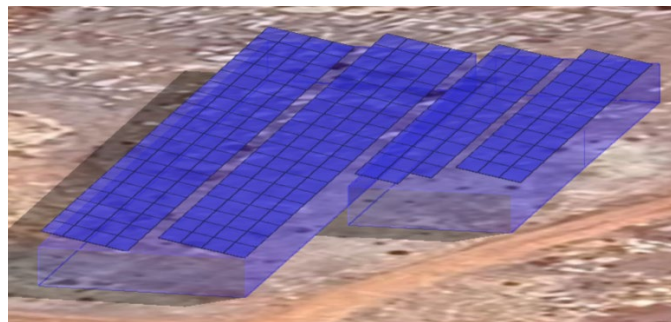


Figure 11: Taraya PV Site – Indicative Side View

4. Indicative images of Sawiri site in Lot 2:

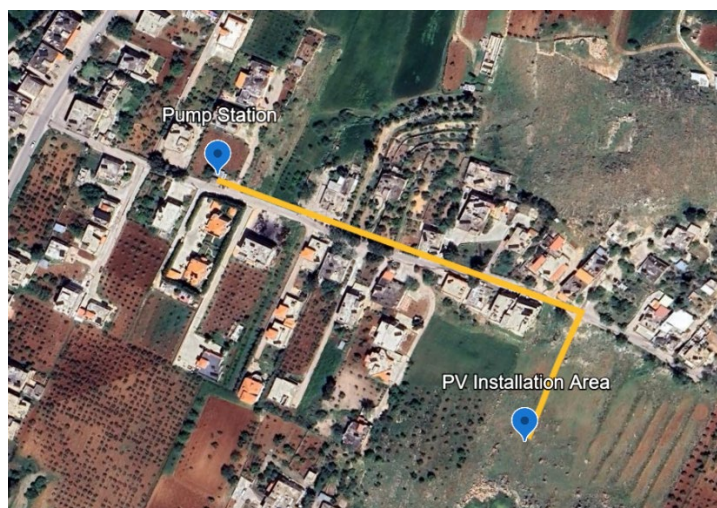


Figure 12: Sawiri PV Site – Site Plan



Figure 13: Sawiri PV Site – Indicative Top View

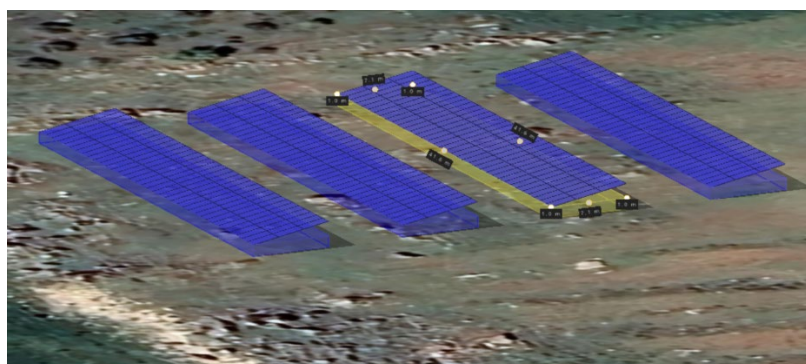


Figure 14: Sawiri PV Site – Indicative Side View

5. Indicative images of Kherbet Qanafar site in Lot 2:



Figure 15: Kherbet Qanafar PV Site – Indicative Top View

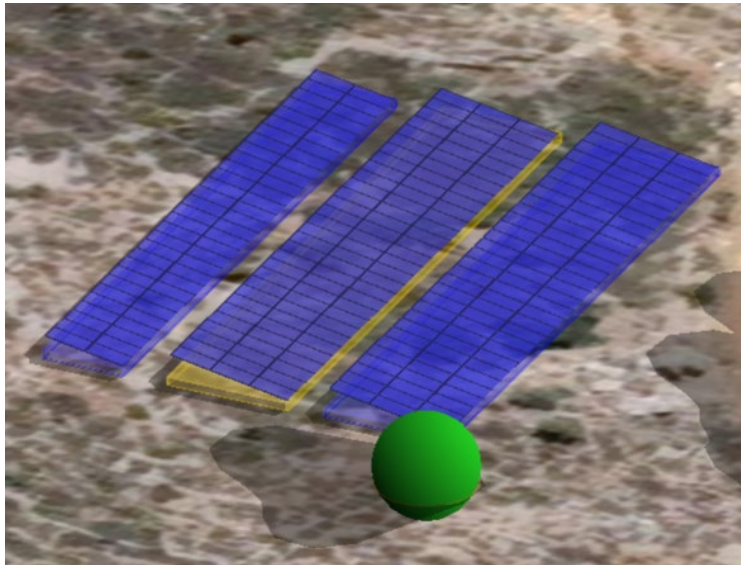


Figure 16: Kherbet Qanafar PV Site – Indicative Side View