


	Project	INGL VALVE STATIONS				
	Document no.	SPC-001				
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	Filename	SPC-001_Solar Generator (Portable)				
DOCUMENT TITLE: SOLAR GENERATOR ON TRAILER PLATFORM						

Solar Generator (Portable)

Specification No.

SPC-001

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1. GENERAL

- 1.1 This Specification covers the minimum technical requirements for the supply of a complete and full functioning, trailer mounted, portable Solar Generator to be used at outdoor locations in emergency situations.
- 1.2 The trailer mounted portable Solar Generator shall be used throughout Israel area. All calculations of the Solar Generator system shall be considered accordingly.
- 1.3 The whole system shall be corrosion resistant, waterproofed and able to operate under dusty and salty atmosphere.
- 1.4 All electrical components, panels, connection boxes etc. shall be IP65.
- 1.5 The Solar Generator system shall comply with this specification and with the requirements of the latest editions of the relevant IEC standards for each component.

2. SYSTEM MAIN COMPONENTS

- 2.1. Trailer Platform (Mobile)
- 2.2. Foldable Solar array (PV Panels)
- 2.3. Batteries+ Charging Controller (dual MPPT charge controllers)
- 2.4. Battery Charger+ Plug (to be used when the system is stored)
- 2.5. Control Box
- 2.6. Circuit breakers, cables and wires
- 2.7. 32A power supply Plug
- 2.8. Fire extinguisher
- 2.9. Maintenance tools

3. SYSTEM DATA

- 3.1. Required power- 750W
- 3.2. Batteries sizes for 72 Hr. back-up supply (54kW)
- 3.3. Supply voltage 24VDC through 32A CEE IP66 Socket

4. Standards

- 4.1. IEC 61215- Crystalline silicon performance
- 4.2. IEC 61730- All modules safety

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- 4.3. IEC 61853- Photovoltaic module performance testing & energy rating
- 4.4. ISO 9488- Solar energy—Vocabulary
- 4.5. Underwriters Laboratories- UL 1703, UL 1741, UL 2703 (Advantage).
- 4.6. IEC 60529- IP Code - Degrees of protection provided by enclosures
- 4.7. CE marking.

5. Components Details

5.1. Trailer Platform (Mobile)

- Roads authorized.
- Rugged trailer, built for integrators.
- All welded structural steel frame
- Trailer Type - Single Axle, A-frame drawbar
- Tire & Rim Size- 15" + 1 spare
- Stabilizers- 4 x manual deployment
- Tow hitch- 50mm ball/70mm ring
- Brakes- Mechanical

5.2. Foldable Solar array (PV Panels)

- Solar array minimum net electrical output = 750W
- Designed to enable convenient storage of the unit. The Solar Panels shall be foldable.
- The Foldable Solar Panels shall have a special compact and robust, suitable for outdoor use, based on High Efficiency Monocrystalline cells.
- Special mechanism shall be applied to enable adjustable tilt angle of the solar panels, to allow optimum power production through all seasons. It shall also enable folding the panels for ease of transportation and storage.

5.3. Batteries

- The batteries shall be Lithium-ion LiFePO4 for storing solar energy.
- A battery management system (BMS) shall be provided. The system shall be a microprocessor-based controller combined with software algorithms for regulating the charging and discharging of the cells. The BMS shall also shut down the system in case of unsafe conditions such as over-voltage or over-temperature.

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- The Charging Controller shall be Dual MPPT (Maximum Power Point Tracking).
- IP65 Enclosure

5.4. Battery Charger

- In IP65 Enclosure
- The solar generator shall have an integral charger for fast charging from 230VAC external source when in storage, provided with portable 10m cable and plug.

5.5. Control Box and features

- Aluminum enclosure with back plate, IP65 Enclosure
- Latch with provision for user-supplied padlock.
- Controller and display

5.6. Alarms (Auxiliary Contact)

- Low batteries voltage- pilot lamp and buzzer
- General Alarm- pilot lamp and (same) buzzer

5.7. Weight

- The weight of the complete unit (inclusive the trailer) shall not exceed 1500 Kg, to allow dragging by a class B licensed pick-up.

6. EXECUTION

6.1. Warranty and Service

The supplier shall include in his proposal **a minimum of 5 years** of maintenance, service and warranty to guarantee proper operation of the units.

6.2. Vendor Obligation

The bidder shall confirm in writing that:

All technical and functional details are clearly understood and considered.

The quoted equipment will be designed and perform in accordance with this specification.

The bidder shall list in detail any deviation from this specification.

6.3. Test

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- One unit shall be fully witness tested at summertime in variable sun conditions and varying weather.
- Prior to the test vendor shall prepare test program, to be approved by client.
- During the test the unit shall be loaded to demonstrate the capability to provide the full nominal load. All test equipment and measuring instruments shall be provided by the supplier.
- The test shall measure the batteries backup time under typical real-world loads.
- Test load shall be provided by vendor.

6.4. Calculations

The following calculations shall be submitted together with the offer for approval:

- Solar array output (750W min.)
- Batteries capacity (AH) (to meet 72 Hr. at dark)
- Battery charger 230V feed.
- Solar Battery charger

6.5. Submittals

- Single Line Diagram
- Trailer platform specification and details
- Batteries type, make, model.
- Batteries warranty for lifetime.
- PV Panels type, make, model.

6.6. Examples

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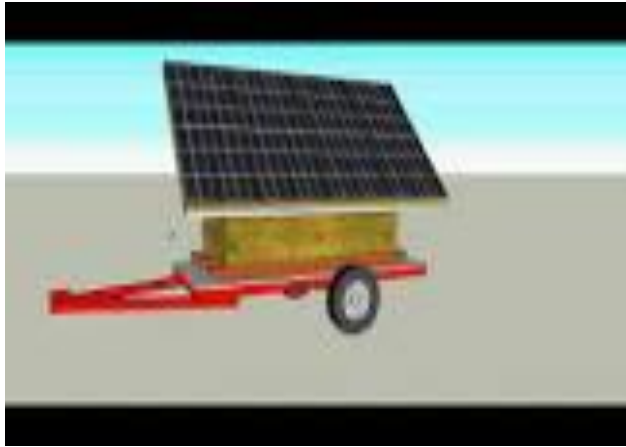
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