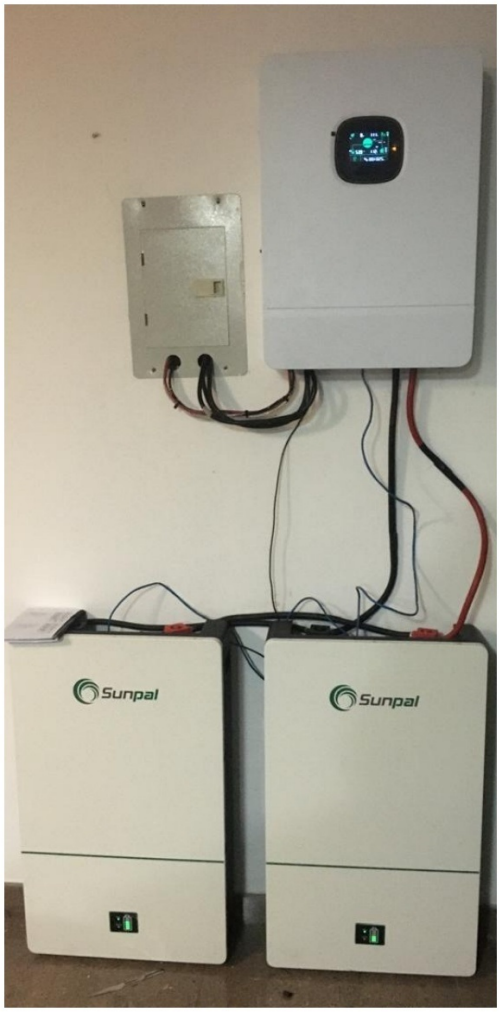
CLIENT CASE STUDY

Hybrid Solar System Sourcing & DDP Logistics: From Manufacturer Vetting to UAE Port Delivery

How Originem Ventures managed end-to-end supply chain — supplier sourcing, factory vetting, price negotiation, quality assurance, and DDP shipping — to launch a new UAE renewable-energy business.



ORIGINEM VENTURES

CLIENT
New Solar Energy Trading Business — United Arab Emirates

PRODUCT
10KW Hybrid Solar System (Panels, Inverter, Battery Storage, BOS Components)

SCOPE
Supplier Sourcing · Vetting · Negotiation · Quality Assurance · DDP Freight to UAE Port

Case Overview

Client	Product Category	Delivery Terms
New Renewable Energy Business, UAE	10KW Hybrid Solar System	DDP (Delivered Duty Paid) to UAE Port

Project Scope: International Supplier Sourcing, Factory Vetting, Price & Terms Negotiation, Quality Assurance, Documentation Compliance, and DDP Freight Coordination for a new hybrid solar system product line entering the UAE market.

Core Focus: Identifying a reliable, export-ready Chinese manufacturer capable of supplying a complete 10KW hybrid solar system — mono solar panels, hybrid inverter, lithium battery storage, PV combiner box, mounting brackets, and cabling — at a competitive, all-in landed cost.

Strategic Outcome: Originem Ventures converted a first-time importer's product concept into a fully sourced, quality-checked, and shipped hybrid solar system — landing at the client's UAE port of entry under DDP terms with duties, freight, and customs pre-cleared.

Supplier Sourcing · Factory Vetting · Price Negotiation · Quality Assurance · Procurement · Incoterms — DDP · Freight Forwarding · Customs Clearance · Landed Cost Optimization · Supply Chain Management · Export Documentation · Container Loading (FCL)

01 — The Client: A New UAE Solar Energy Business

The client is a newly established solar energy trading business based in the **United Arab Emirates**, entering the renewable-energy retail and installation market. With no existing manufacturer relationships in China and limited in-house experience in cross-border procurement, the client needed a trusted partner to identify a reliable factory, validate product quality, negotiate favorable commercial terms, and manage the shipment through to final delivery.

Target Market	Business Stage	Core Need
United Arab Emirates (GCC region)	New market entrant — first international sourcing engagement	A vetted manufacturer, negotiated pricing, and a hassle-free DDP shipment to a UAE port.

02 — The Challenge

First-time importers of technical products such as hybrid solar systems face several recurring risks in international sourcing:

- Identifying a **genuine, export-experienced manufacturer** rather than a trading intermediary with inflated margins.
- Verifying real production capability, component quality, and certifications before committing capital.
- Negotiating a **competitive, transparent price** across panels, inverter, battery, mounting, and balance-of-system components.
- Structuring the deal under **DDP (Delivered Duty Paid)** terms so the client had one predictable landed cost — with no surprise customs, duty, or port-handling charges in the UAE.
- Coordinating packing, container loading, and freight documentation to avoid delays or damage in transit.

PRODUCT SCOPE

03 — Product Definition: 10KW Hybrid Solar System

Originem worked with the client to define a clear technical scope before approaching manufacturers, ensuring every supplier quoted on an identical, apples-to-apples basis:

System Components

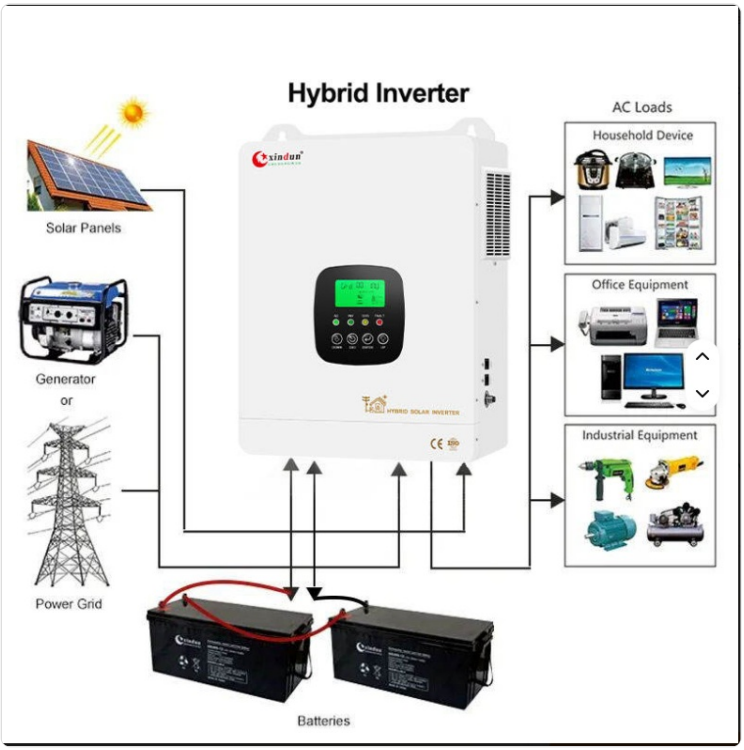
- Mono Solar Panels
- Hybrid Inverter
- Photovoltaic Combiner Box
- Mounting Brackets
- PV Cable & MC4 Connectors
- Lithium Battery Storage (optional, for off-grid/backup configuration)

Sourcing Priorities

- TUV/UL-rated cabling and components
- Factory-direct pricing (no unnecessary middlemen)
- Export-grade wooden case / pallet packing
- DDP delivery to UAE port

How a Hybrid Solar System Works

To align the client's expectations with the technical build, Originem also shared reference system diagrams illustrating how the hybrid inverter manages power flow between solar panels, battery storage, generator/backup power, and grid supply:

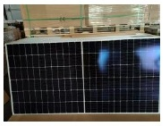


Reference hybrid inverter architecture — solar, generator/grid, and battery inputs feeding household, office, and industrial AC loads

Sample hybrid inverter units reviewed as part of the component shortlist, staged for testing ahead of export packing

Component Technical Specification Detail

As part of the supplier vetting process, Originem obtained a full component-level technical specification sheet from the candidate manufacturer — confirming power ratings, materials, certifications, and lifespan for every part of the system before proceeding to commercial negotiation.

Component Technical Specification Detail			
Item No	Photo	Name/Model	Specification
1		10KW Solar Inverter	Output Power: 10000W Inverter type: Low frequency pure sine wave Output voltage: 230V220V ±5% Single phase Output voltage: 50Hz/60Hz±1% Waveform(Pure sine wave): THD<2% Working model: Solar power first，if battery low switch to city power Protection: DC under voltage/overload/short circuit/peak surge. Life Span: 15 years
2		Solar Panel 550WP	Maximum power(P_{max}):550WP Material: Mono-crystalline silicone cells Open circuit voltage (Voc): 49.8 V Maximum current (Imp): 13.53A Size: 2279mm×1134mm×35mm Weight: 28Kg
3		Installation tool	Photovoltaic MC4 Matched
4		PV Bracket	Aluminum Alloy materials Wind load: 55m/s, Snow load:1.5kn/m2
5		Cable	TUV and UL standard, with specification suitable for solar system;
6		Packing	Wooden case with pallet.
7		Lithium Battery 200AH/51.2V	Standard Capacity: 200AH; Rated Voltage:51.2V Input Voltage Range: 60V -100V Continuous Input current: 100A; Continuous output current: 100A; Rate of Discharge :<0.8C Cycle life:6000 times (<0.5C);
8		PV Combiner Box	Applicable for outdoor PV systems Max Current: 120A Waterproof terminals

Component-level technical specification sheet: 10KW inverter, 550WP mono solar panel, PV bracket, cabling, packing, 200AH/51.2V lithium battery, and PV combiner box

SOURCING & VETTING

04 — Supplier Discovery & Manufacturer Vetting

Originem approached this engagement the way it approaches every cross-border sourcing project: cast a wide net of candidate manufacturers, verify each one's real production capability, and only bring forward suppliers who could be trusted with the client's capital and reputation.

1. **Long-list Candidate Manufacturers** — Originem identified multiple Chinese solar equipment manufacturers and trading companies capable of producing a complete 10KW hybrid system.
2. **Factory & Capability Verification** — Requesting production photos, packing documentation, and component specification sheets to confirm real manufacturing capacity (not a reseller front).
3. **Comparative Quotation** — Collecting itemized quotations across panels, inverter, brackets, cabling, and packaging to benchmark pricing and terms.
4. **Quality & Packing Standards Review** — Reviewing how each factory palletizes, wraps, and documents its shipments ahead of export.

ROSENPV SOLAR

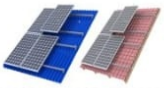
Rosen Solar Energy Co., Ltd
融晟科技

Just for You

To:	From:
Contact:Norval Mendez	Contact: Kero
Company:	Company: Rosen Solar Energy Co., Ltd.
Address:	Address: No.335, Xueji Road, Hefei, Anhui, China.
Email:norval@digitalawah.com	Email: sales19@rosensolar.com
Tel:	Tel/whastapp: +86 17756975191

2025/8/29

Rosen 10KW On Grid Solar System

	Photos for reference	Description	Quantity	Unit-price	Total price
1		**Rosen Half Cell Topcon Panels** Rated Power: Mono 650W;	14	$50.00	$700.00
2		**Rosen 10kw On grid Inverter** Output voltage: 220Vac Single phase L/N/PE; 50/60Hz	1	$720.00	$720.00
3		**Wifi module** Electricity Production & Consumption Data Monitoring	1	$15.00	$15.00
4		**Rosen PV Cable** Single core PV Cable 4mm² (+;-)	100	$0.80	$80.00
5		**Rosen Mounting system(Brackets)** Customized Aluminium Alloy; Mounted on the flat/pitched roof	1	$448.00	$448.00
6		**Rosen Compatible MC4 connector** Female/Male/Fuse 30A 1500Vdc	14	$0.50	$7.00
7		Rosen Customized Wooden Box Package	1	$50.00	$50.00
8	Profefssional System Connection design				$0.00
9	Profefssional Brackets Configuration Design				$0.00
10	**Shipping Cost to Port of Poti,Georgia**				**$410.00**
11	**Total CFR Cost**				**$2,430.00**

Sample itemized manufacturer quotation reviewed during comparative sourcing — Rosen Solar Energy Co., Ltd. (Anhui, China): panels, inverter, brackets, cabling, wooden-box packing, and CFR shipping cost breakdown

Note: this quotation reflects one of several comparative offers gathered from candidate manufacturers during the negotiation phase. It was used as pricing leverage and a specification benchmark; final commercial terms for the client's shipment were negotiated separately under DDP conditions to the UAE port.

Shipment Specification & Cost Reference

Once a preferred manufacturer was shortlisted, Originem worked through a detailed shipment breakdown — confirming product scope, package count, gross weight, volume, and estimated product cost ahead of finalizing commercial terms:

Product Description: 10KW Hybrid Solar System

From: Anhui Province,China To: Village Leghvani, Georgia (Europe)

10KW Hybrid Solar System without Battery

- **1. Mono Solar Panels:**
- **2. Hybrid Inverter:**
- **3. Photovoltaic Combiner Box:**
- **4. Mounting Brackets:**
- **5. PV Cable & MC4 Connectors:**

Packing List (No. SK06-US-20250829).

Total Shipment Summary:

- **Total Gross Weight: 632 kg**
- **Total Volume: 2.19 cbm (cubic meters)**
- **Total Number of Packages: 6**
- **Shipping Terms: DDP**
- **Destination: Village: Leghvani Georgia**

Product Cost: 1800 USD estimated

Shipment Breakdown by Package:

Item Description	Quantity	No. of Packages (PKS)	Gross Weight (kg)
1. Mono Solar Panel	17	1	440
2. Inverter	1	1	26
3. Photovoltaic Combiner Box	1	1	15
4. Mounting Bracket	17	1	140
5. PV Cable	1 (roll)	1	10
6. MC4 Compatible Connector	20	1	1
Total		**6**	**632**

Reference shipment specification sheet: 10KW Hybrid Solar System (without battery) — package breakdown, gross weight, and volume used to benchmark freight and landed cost calculations

Note: this specification sheet is drawn from a comparable reference shipment and was used internally to validate package counts, weights, and volumetric data before finalizing the client's own DDP quotation to the UAE.

05 — Factory Quality Control & Production Verification

Before committing to a purchase order, Originem reviewed factory-floor production evidence to confirm the manufacturer's real output capacity and packing standards — a critical due-diligence step for any first-time importer.

Battery units being crated for export at the manufacturer's facility, staged on pallets ahead of wrapping and container loading — confirming genuine production capacity ahead of order confirmation

Export Packing Standards

Consistent, export-grade packing directly affects transit damage risk and customs clearance speed. Originem reviewed the manufacturer's standard packing process for photovoltaic modules and system components:

Photovoltaic module cartons shrink-wrapped and palletized at the factory warehouse ahead of container loading

Palletized modules loaded and secured inside the export container, labeled and ready for departure

06 — Export Documentation & Packing List Verification

Originem cross-checked the manufacturer's official packing list against the agreed order specification — confirming item descriptions, quantities, package counts, net/gross weight, and shipment volume before freight booking, to prevent discrepancies at customs.

Why Documentation Accuracy Matters

- Prevents mismatches between the commercial invoice, packing list, and physical cargo — a common cause of customs delays.
- Confirms gross weight and volume (CBM) figures used to calculate accurate freight and DDP landed cost.
- Provides a clean paper trail for the client's own import records in the UAE.

> The itemized shipment specification (package counts, gross weight, and volume) reviewed on the previous pages was cross-verified line-by-line against the manufacturer's commercial invoice before freight booking was confirmed.

07 — DDP Freight Structuring

To give the client one predictable, all-in landed cost, Originem negotiated shipping under **DDP (Delivered Duty Paid)** Incoterms — meaning freight, insurance considerations, import duties, and destination-port charges were pre-negotiated and built into a single quoted figure, removing the guesswork and hidden-fee risk that commonly catches first-time importers off guard.

> **Why DDP for a first-time importer:** Under DDP terms, the seller/forwarder is responsible for export clearance, international freight, import duties, and delivery to the buyer's named destination — the UAE client only needed to receive the goods, with no separate customs broker or duty payment to arrange locally.

SEA FREIGHT DOOR TO DOOR QUOTATION

TUDOR INTERNATIONAL FREIGHT

Low Hall Road, Horsforth,
Leeds, LS18 4EF, UK

Tel: 0113 250 1155
Email: sales@tudorfreight.com
Web: www.tudorfreight.com

Quote Reference: Q005527 **Date of Issue:** 09/09/2025

Customer
MONTASIR MEHEDI OVI
UNITED KINGDOM

Collect From
ORME BUSINESS CENTRE
GREENACRES RD
OLDHAM OL4 3NS GB

Port of Departure
SOUTHAMPTON

Port of Arrival
SHANGHAI

Packages	Length (cm)	Width (cm)	Height (cm)	Weight (kgs)
20 PX	120.00	100.00	140.00	10,000.00

Deliver To
SHANGHAI
PUDONG S1 201202 CHINA CN

Approximate Transit Time
51 days

Terms
DELIVERED DUTY PAID

Other Details:
Long Length: NO **Non Stackable:** NO **Hazardous:** NO
Tail Lift: NO **Timed Pickup:** NO **Insurance:** NO

Load Type	Description of Goods	Weight (Kgs)	Volume (M3)
FCL 1 X 40HC	20 PALLET(S) PERSONAL CARE ITEMS (CREAMS)	10,000.00	33.60

Charge Description	Currency	Charge Total
FREIGHT CHARGES - EXCLUDING DUTIES AND TAXES	GBP	1,995.00

Additional Info
EXCLUDING ANY ADDITIONAL PORT CHARGES - AT COST / EXCLUDING ANY DUTIES AND TAXES - AT COST

BASED ON SHIPPER LOADING, LASHING AND SECURING THE CARGO AT THE LOADING POINT

Currency	Total
GBP	1,995.00

Terms and Conditions
All quotations are given in good faith and are based on current rates; we reserve the right to amend quotations with or without notice. Our quotation is subject to availability of space and equipment by the carrier. It is the responsibility of the individual receiving this quotation to advise any discrepancies between what has been quoted and what has been requested. For all airfreight shipments primary screening is included in the above cost. Secondary screening (if required) will be charged at cost of £0.30p/kg or minimum of £150.00. Our quotation is not valid for personal effects consignments or residential deliveries. All cargo should be packed suitably for transit in advance of collection. Unless otherwise stated, our quotation excludes cargo insurance, import permit costs, DGR surcharges, unpacking, removal of debris and re-positioning, cargo dismantling, cargo assembling transportation overtime charges, heavy lift equipment, customs duties and taxes, detention charges, customs inspection fees, terminal charges, and storage costs. Any wooden packaging materials used on your shipment including pallets will need to be certified to ISPM 15 standards.

This quote is valid until 09/10/2025
To book this shipment please email cat@tudorfreight.com

AEO UK Authorised Economic Operator

Registered in England and Wales No: 2586291 VAT No: GB557179213
All business is undertaken subject to the British International Freight Association (BIFA) Standard Trading Conditions (STC's), latest edition. A copy can be supplied on request or can be downloaded at www.bifa.org. BIFA Reg No: 2586

BIFA BRITISH INTERNATIONAL FREIGHT ASSOCIATION

Sample door-to-door sea freight quotation format (reference document) used to benchmark DDP freight structuring, charge breakdown, and transit-time terms with freight forwarding partners

Note: this document is a reference freight quotation used to illustrate the standard door-to-door, DDP quotation format and charge structure reviewed during freight-partner negotiations. It does not represent the client's specific hybrid solar shipment routing or cargo.

DEPLOYMENT

08 — Final Installation & System Commissioning

Once the shipment cleared customs and reached its destination, the hybrid solar system components — panels, hybrid inverter, and battery storage — were installed and commissioned on site, completing the journey from factory sourcing to a fully operational renewable-energy system.

Wall-mounted hybrid inverter with battery storage, and rooftop-mounted solar panels — installed and commissioned as part of a completed system deployment

Wall-mounted hybrid inverter and protection/distribution panel, wired and commissioned on site

OUTCOME

09 — Business Value & Key Takeaway

This engagement demonstrates how Originem Ventures manages the full supply chain lifecycle for a first-time importer — from manufacturer discovery and factory vetting, through price negotiation and quality assurance, to export documentation and DDP freight delivery. For the client, a new UAE solar energy business, this meant entering the market with a vetted product, a transparent landed cost, and a shipment delivered without customs surprises.

- Supplier Due Diligence
- Manufacturer Vetting
- Price & Terms Negotiation
- Quality Assurance (QA)
- Export Packing Standards
- Packing List Verification
- DDP Incoterms
- Freight Forwarding
- Customs Clearance
- Landed Cost
- FCL Container Loading
- End-to-End Supply Chain Management

KEY TAKEAWAY

A first-time importer succeeds in international sourcing not by finding the cheapest quote, but by pairing a vetted manufacturer with disciplined quality assurance, accurate documentation, and a transparent DDP freight structure — turning a high-risk overseas purchase into a predictable, single landed cost.