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Solar Installation Takeoff — 5 kVA Hybrid System, Duplex

4.5 kWp of panels, 5 kVA hybrid inverter and 4.8 kWh of lithium batteries

Project	4-bedroom detached duplex (example)
Location	Lekki, Lagos
Client	Mrs Okafor (example)
Floor area	336 m² (14.0 × 12.0 m × 2 floors)
Prepared by	Example QS (sample)
Rates as at	Nov 2026 · Lekki, Lagos

BASIS OF MEASUREMENT

• Sized for essential loads: lights, fans, TVs, fridge/freezer, laptops and the water pump — about 12–15 kWh a day. Not for ACs, iron or water heater.

• 10 × 450 W panels on the south-facing roof slope; inverter and batteries in a ventilated store.

• Panel price uses the per-watt rate; mounting, cable and installation rates are placeholders. Prices move with the exchange rate — re-check on the day you buy.

SUMMARY BY ELEMENT

#	Element	Amount (₦)	% of total
1	A Solar panels	₦2,106,000	36.2%
2	B Inverter & batteries	₦2,898,000	49.9%
3	C Cables & protection	₦362,400	6.2%
4	D Installation	₦444,000	7.6%
	Measured work	**₦5,810,400**	

Measured work	₦5,810,400
Contingency (%)	5.0%
Contingency	₦290,520
VAT (%)	7.5%
VAT	₦457,569
TOTAL	**₦6,558,489**

Rates are Lekki, Lagos market rates from NigeriaBuildingCost.ng (supply and fix unless stated). The project, client and dimensions are an example — replace them with your own drawings.

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Quantities are pulled from the Dimensions sheet — change a dimension there, or a rate here, and the totals update

A SOLAR PANELS

Ref	Description	Qty	Unit	Rate (₦)	Amount (₦)
A1	450 W monocrystalline solar panel	10.00	nr	₦189,000	₦1,890,000
A2	Aluminium mounting rails, clamps and roof hooks, per panel	10.00	nr	₦21,600	₦216,000
				Carried to summary	**₦2,106,000**

B INVERTER & BATTERIES

Ref	Description	Qty	Unit	Rate (₦)	Amount (₦)
B1	5 kVA / 48 V hybrid inverter with built-in MPPT charger	1.00	nr	₦1,020,000	₦1,020,000
B2	Lithium battery 12 V 100 Ah (4 in series = 48 V, 4.8 kWh)	4.00	nr	₦456,000	₦1,824,000
B3	Battery rack and interconnecting cables	1.00	item	₦54,000	₦54,000
				Carried to summary	**₦2,898,000**

C CABLES & PROTECTION

Ref	Description	Qty	Unit	Rate (₦)	Amount (₦)
C1	6 mm² PV DC cable (red + black)	60.00	m	₦1,800	₦108,000
C2	DC isolator, DC breaker and surge protector	1.00	set	₦78,000	₦78,000
C3	AC breaker / changeover to the house distribution board	1.00	set	₦66,000	₦66,000
C4	Earthing: copper rod, cable and lightning arrester	1.00	set	₦72,000	₦72,000
C5	PVC conduit and trunking	40.00	m	₦960	₦38,400
				Carried to summary	**₦362,400**

D INSTALLATION

Ref	Description	Qty	Unit	Rate (₦)	Amount (₦)
D1	Install panels on roof, inverter and batteries, wire and connect	1.00	item	₦300,000	₦300,000
D2	Separate essential-loads circuit (lights, sockets, fridge, pump)	1.00	item	₦96,000	₦96,000

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D3	Test, commission and hand over (settings, monitoring app)	1.00	item	₦48,000	₦48,000
				Carried to summary	**₦444,000**

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Dimensions — Solar Installation Takeoff — 5 kVA Hybrid System, Duplex

Quantity = timesing × length × width × height/depth (blank = 1). Negative timesing = deduction (openings, voids).

A SOLAR PANELS

Ref	Location / dimension	Times	L (m)	W (m)	H/D (m)	Quantity	Unit
A1 450 W monocrystalline solar panel (nr)							
A1	String of 10 (4.5 kWp)	10.000				10.00	nr
	Total carried to Priced Takeoff					10.00	nr
A2 Aluminium mounting rails, clamps and roof hooks, per panel (nr)							
A2	Per panel	10.000				10.00	nr
	Total carried to Priced Takeoff					10.00	nr

B INVERTER & BATTERIES

Ref	Location / dimension	Times	L (m)	W (m)	H/D (m)	Quantity	Unit
B1 5 kVA / 48 V hybrid inverter with built-in MPPT charger (nr)							
B1	Inverter	1.000				1.00	nr
	Total carried to Priced Takeoff					1.00	nr
B2 Lithium battery 12 V 100 Ah (4 in series = 48 V, 4.8 kWh) (nr)							
B2	Battery bank	4.000				4.00	nr
	Total carried to Priced Takeoff					4.00	nr
B3 Battery rack and interconnecting cables (item)							
B3	Bank	1.000				1.00	item
	Total carried to Priced Takeoff					1.00	item

C CABLES & PROTECTION

Ref	Location / dimension	Times	L (m)	W (m)	H/D (m)	Quantity	Unit
C1 6 mm² PV DC cable (red + black) (m)							
C1	Roof to inverter, 2 runs	2.000	30.000			60.00	m
	Total carried to Priced Takeoff					60.00	m
C2 DC isolator, DC breaker and surge protector (set)							
C2	PV input	1.000				1.00	set
	Total carried to Priced Takeoff					1.00	set
C3 AC breaker / changeover to the house distribution board (set)							
C3	Output	1.000				1.00	set
	Total carried to Priced Takeoff					1.00	set
C4 Earthing: copper rod, cable and lightning arrester (set)							
C4	System	1.000				1.00	set
	Total carried to Priced Takeoff					1.00	set
C5 PVC conduit and trunking (m)							
C5	Cable route	1.000	40.000			40.00	m

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	Total carried to Priced Takeoff					40.00	m

D INSTALLATION

Ref	Location / dimension	Times	L (m)	W (m)	H/D (m)	Quantity	Unit
D1 Install panels on roof, inverter and batteries, wire and connect (item)							
D1	System	1.000				1.00	item
	Total carried to Priced Takeoff					1.00	item
D2 Separate essential-loads circuit (lights, sockets, fridge, pump) (item)							
D2	House	1.000				1.00	item
	Total carried to Priced Takeoff					1.00	item
D3 Test, commission and hand over (settings, monitoring app) (item)							
D3	System	1.000				1.00	item
	Total carried to Priced Takeoff					1.00	item

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