City of Key West
Solar Evaluation Form

Per Resolution 19-328, options for solar power components shall be presented to the City Commission for all future City development and redevelopment projects.

Please attach supporting documents, including panel specs for calculations

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Section 1: Energy Usage

Project Name: KOTS- Keys Overnight Temporary Shelter Post Disaster Importance __High __Med _X_Low

Square Feet of Building(s): 10,422 SF

Estimated Annual Energy Use (kW): _____

Estimated Daily Emergency Energy Use (kW): _____

Section 2: Energy Use Related to Water Heating: N/A

Section 3: Panel Specs:
Warranty: 25 years Expected Lifespan: 40 years

Section 4: Estimated Energy Production

Potential Siting	**Space Available for Solar** (sq foot)	**Estimated Energy Output** (kWh/Yr)	**Price Per Kilowatt**	**Estimated Percent Energy Supplanted**
Roof	7,250	204,985	0.17	
Parking Lot				
Other				
Other				
Water Heater				

Section 5: Estimated Energy Production Cost

Potential Siting	**Cost of Net Zero** (supplants all usage)	**ROI** (Years)	**Cost of Supplanting Emergency Use**	**ROI** (Years)
Roof				
Parking Lot				
Other				
Other				
Water Heater				

Section 6: Recommended Installation

Potential Siting	**% of Usage Supplanted**	**Cost**	**ROI** (Years)
Roof			
Parking Lot			
Other			
Other			
Water Heater			

Section 7: Narrative:

A grid tie solar system is most logical type of system for this application. A system size of 125-kW costs roughly at $4/watt to build, $4 x 125,000 = $500,000.

PVWATTS.NRELGOV calculator shows this system will produce 204,985 kWh/year. Total cost for electricity on the Keys Energy Service system is $0.17/kWh. This system will produce approximately $34,847 worth of electricity every year or roughly $2,904/month.

The simple payback of the system based on estimated construction cost and electricity produced is approximately 14.4 years using the current energy rate without any maintenance or escalation costs factored in.

Using the numbers presented, the system will provide cost saving of $696,940 worth of electricity over 20 years. If energy escalation costs increase 2% per year for 20 years, the system will provide a cost savings of $846,701 worth of electricity over that period.

Note that solar panels general carry 25-year warranties and can last much longer. If this system lasts 40 years, it will pay for itself several times over.

Section 8: Attachments

N/A