



THE CITY OF KEY WEST

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EXECUTIVE SUMMARY

Date: September 20, 2022

To: Patti McLauchlin, City Manager
Todd Stoughton, Assistant City Manager
Gary Volenec, Interim Engineering Director

From: Albiona Balliu, Sr. Project Manager

Subject: **Solar System decision for the proposed new Homeless Shelter (KOTS)**

ACTION STATEMENT

Staff is requesting a decision on whether to install solar system equipment on the roof of the new Homeless Shelter building at the current Keys Overnight Temporary Shelter (KOTS) facility.

BACKGROUND

Resolution 19-328 requires that options for solar power components be presented to the City Commission for all future city development and redevelopment projects. Building solar infrastructure limits reliance on fossil fuels, adds resiliency, and provides life-cycle energy cost savings. Drawbacks to solar infrastructure include increased up-front costs and ongoing maintenance expenses.

A review/cost analysis has been conducted to evaluate the impacts associated with implementing solar infrastructure at the new KOTS Shelter. The project is at the 60% Construction Drawings stage, and the information provided in the analysis is based on estimates and assumptions for both cost and production performance of solar infrastructure. If the City Commission directs moving forward with solar installation, further design and estimating will be done prior to purchasing the system.

PURPOSE AND JUSTIFICATION

The consideration of Solar energy for City Facilities follows the City's Strategic Plan, *Key West Forward*, Priority 4, Environmental Protection, Protect the Health and Longevity of the Island and its Inhabitants; Goal 1- Energy Efficiency and Resilience – Action Item 5. All Development and Redevelopment include the option for Solar Energy.

FINANCIAL IMPACT

In order to consider the option of placing a solar system at KOTS, a preliminary solar system review/cost analysis was prepared which incorporated solar panels being installed on top of the roof on engineered mounting stands. The overall costs of the solar system and life cycle were then evaluated by comparing associated costs with system income/energy production.

Proposed Building	Solar System Design	Structural/Roof Modification	Mounting Stands	System Cost 125 kW*	Estimated Construction Costs
KOTS	\$ 30,000	\$ 10,000	\$ 12,000	\$ 500,000	\$ 552,000

* \$4,000 per kW

Annual Production Estimated kWh**	Income per kWh	Est. Annual Income	Annual Maintenance	Net Annual Income	Payback in Years
205,313	\$ 0.19	\$ 39,009	\$ 6,000	\$ 33,009	16.72

** 125 kW X 365 days/year X 4.5 avg. sunlight hours/day

Based on the preliminary cost analysis, the pay back on the initial capital investment could take approximately 17 years. If the solar system is selected to be installed at the KOTS facility, the Construction Drawings would be designed to include the system, the construction of which would be bid as part of the entire project. While most current warranties for solar systems meet or exceed 25 years, the wear on panels in a harsh environment could shorten their life cycle substantially.

RECOMMENDATION

After evaluating the overall solar system costs and relatively long payback period, Staff recommends NOT installing solar infrastructure for the new homeless shelter building at KOTS. The harsh environment in Key West will accelerate wear on panels which could shorten their life cycle substantially. Additionally, the lack of solar system maintenance companies in the Keys makes upkeep on systems as they age difficult to obtain.