
Appendix C3

Residential Solar Memo



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MEMORANDUM

TO: FILE

From: Sunnova and Alan Willingham, Senior Vice President Lennar Homes

RE: Carlton Oaks Residential Solar

The project design includes installation of a photovoltaic solar system with a total design capacity of 600 kW, which is the estimated maximum size foreseeable on all rooftops and areas suitable for solar within the mixed use recreational development project.

The community would result in a variety of detached, single-family residential product types that may range from approximately 1,300 to 2,700 square feet. This memo confirms that Lennar Homes in conjunction with our solar provider, Sunnova, evaluated the proposed (should this say "prototype") typical architecture plans and plotting for both the residential Planning Areas for the project, representing an average residential product type and the capacity of to provide solar panels.

The sample design for a single-family residence (SFR) and sample design for a multi-family residence (MFR), represents a typical home and a typical multi-family building, for the proposed Carlton Oaks mixed use recreational project in Santee. Sample residences are used for this analysis as building plans have yet to be developed for the site.

The PV system was sized using the worst-case building orientation and standard efficiency panels with all PV panels facing south. The system configuration for this prototype residence would allow standard 2.6 Kw panels. More efficient panels, however, may be used as technology for such panels improve.

The California Fire Code (Section 605.11) dictates that PV arrays must be a minimum of three feet from the ridge, have one-and-a-half-foot clearance on each side of the array, as well as one-and-a-half-foot clearance from hips and valleys. If the required roof area is unavailable on south facing roofs, additional PV panels can be located on remaining roof orientations to meet the minimum required yearly production. If additional roof orientations are used, the PV system size may need to be increased due to PV production being proportional to orientation, as described above.

The result of the evaluation is that a photovoltaic system sized at 4.5KW per home for the project will work based on the current residential product types described above. The average available roof area is over 1100 square feet and the approximate space needed for a 4.5 Kw (4500 watt) photovoltaic system is approximately 350 square feet of roof area, based on a calculation on a 13 watts per square of roof area. The roof elevation, pitch and orientation will determine the final available space on any individual homesite.

