Legislation Text

**File #:** 2017-0574, **Version:** 2

## Title/Name/Summary

Solar Panel Installation - 15613 Plum Tree Drive - Shah Solar Panels, Installation of 6.6 kW Solar Array as part of an Environmental Clean Technology (ECT) Review

## History

**QUICKFACTS**

**Project**
Solar Panel Installation - 15613 Plum Tree Drive - Shah Solar Panels, Installation of 6.6 kW Solar Array as part of an Environmental Clean Technology (ECT) Review
2017-0574 / AR-17-00455

**Petitioner**
Dr. Vadna Shah

**Purpose**
The purpose of this petition is to install and maintain a roof-mounted solar panel system at a single-family residence located at 15613 Plum Tree Drive.

*Requested Actions:* Appearance Review (Environmental Clean Technology)

**Project Attributes**
*Address:* 15613 Plum Tree Drive

*P.I.N.(s):* 27-14-308-023-0000

*Parcel Size:* 0.23 acres
Building Size: 3,790 SF

*Comprehensive Plan Planning District:* Silver Lake South Planning District
*Comprehensive Land Designation:* Single Family Residential
*Existing Zoning:* R-3 Residential District
*Existing Land Use:* Single Family Home

*Surrounding Land Use:*
North: R-3 Residential District - Single Family Home
South: R-3 Residential District - Single Family Home
East: R-3 Residential District - Single Family Home
West: R-3 Residential District - Single Family Home

*Preliminary Engineering*: A structural engineers report was submitted with this petition, which

concluded that the roof structure can safely support the weight of the proposed solar panels.

## PLANNING OVERVIEW AND BACKGROUND

Section 6-314.C of the Land Development Code requires that the petitioner seeking a renewable energy or environmental clean technology system first obtain an Environmental Clean Technology (ECT) review from the Plan Commission. Subsequent to such a review, this project will follow the standard development review process. A review will next take place at the Development Services and Planning Committee and then a final review and decision from the Village Board of Trustees.

A similar ECT project at 15221 Cottonwood Court (2017-0441) has recently been approved after undergoing the previously mentioned process.

## PROJECT DESCRIPTION & CONTEXT

The petitioner is proposing to install and maintain 6.6 kW interactive solar arrays, comprised of twenty (20) photovoltaic (PV) solar panels at a single family home located in the Golfview Subdivision. The solar panels will be located on the south and east facing gabled rooftops of a single-family residence located at 15613 Plum Tree Drive. Energy captured by the proposed solar panels will be used for general household purposes, providing an overall general reduction in electricity costs for the homeowner. The solar panel system also includes an “Ironridge XR-100” racking system, inverters and other electrical service components.

The petitioner does not request any variances for this project.

The recommendation motion includes the following conditions:
1. That all building code related items shall be met;
2. That all building permits shall be obtained prior to construction;
3. That all utility conduits and systems related to the solar energy system shall not be visible from any adjacent street and from neighboring residential properties;
4. That additional screening of any utility conduits and systems related to the solar energy system may be required after installation has been completed, as determined by the Development Services Department.

Overall, the project conforms to the Village’s Comprehensive Plan, Land Development Code and policies for this area.

## SITE PLAN

The petitioner submitted a plan set (“Plan and Construction Set”) prepared by Ailey Solar Electric., dated 08/04/2017 detailing the location, dimensions and materials to be used for the installation of the proposed solar panels. The solar panels (collectively referred to as an array) will be located on the east and south-facing roofs of a single family house.

The proposal is for a 6.6 kW, grid-tied photovoltaic (PV) installation, comprised of (20) twenty "Panasonic 330W” modules (panels) arranged in four (4) groupings. The array will be supported by a flush mounted racking system, which is a low-profile system that connects to roof rafters with structural screws.

One (1) "Solaredge Inverters" will be used to convert incoming Direct Current (DC) to Alternating Current (AC) before entering the building. DC disconnects will be located at each inverter. All ground-

level utilities will be screened from view from neighboring properties and from the street. Additional screening may be required after installation is complete to ensure adequate screening has been provided.

## DETAILED PLANNING DISCUSSION

As a component of sustainability and stewardship, one of the goals of the Village's Comprehensive Plan is to reduce the dependence on non-renewable resources by "support(ing) private and public infrastructure upgrades that meet local energy demand using renewable sources (wind, solar, biomass/fuel, geothermal, fuel cells etc.)." The proposed project supports this and other sustainability goals of the Comprehensive Plan.

Section 6-314.E.1 of the Land Development Code permits the installation of solar panels on residential rooftops via an Environmental Clean Technology review provided that:

1. Solar panels do not increase the visual height of the building;
2. Solar panels do not extend beyond the edge of the parapet or roof; and
3. Solar panels are in line with the plane of the roof and shall not be attached to chimneys.
4. That no more than seventy-five percent (75%) of a residential rooftop may be covered by PV collectors or arrays.
5. Solar panels shall be placed such that concentrated solar radiation or glare shall not be directed onto nearby properties, roadways or public right-of-ways.

### ITEMS 1 - 4

The arrays are located on east and south facing rooftops to maximize solar reception, inset from roof eaves. The arrays will be in line with the plane of the roof, are not attached to any chimneys and will not increase the visual height of the building. The proposed array is approximately 344 SF in area while the rooftop is approximately 2,700 square feet, equaling 12% rooftop coverage.

### ITEM 5

As there is a neighboring property in line with the solar panels on the south building elevation, the petitioner and contractor were asked to provide assurance that "concentrated solar radiation or glare shall not be directed onto nearby properties".

The petitioner subsequently provided the Village with a letter and documentation from the project contractor stating that in their professional experience, none of the solar arrays being planned for Dr. Shah's property should pose a solar reflection or glare risk to any of the neighbors, including the south facing array and the neighbor directly to the south. For additional assurance, they included a number of documents:

- A photo of the Shah home and the property to the south;
- A scale plan drawing showing the expected direction of reflected sunlight on the Summer Solstice (the highest point in the year the sun will appear);
- A scale plan drawing showing the expected direction of reflected sunlight on the Winter Solstice (the lowest point in the year the sun will appear).

The neighboring property with the most direct view of the array is to the south; the array would be approximately 25-feet from this property's main house. The provided scaled drawings showing the expected direction of reflected sunlight on the summer solstice (highest point in the year of that the

sun appears) and winter solstice (lowest point in the year of that the sun appears) were provided by the petitioner's contractor. The drawings suggest that while solar panels will face the neighboring property, the angle at which they will be installed will preclude any direct solar reflection or glare on to the adjacent house.

The plan set submitted by the petitioner indicate that all of the Environmental Clean Technology review criteria for this project has been met.

Overall, the project conforms to the Village's Comprehensive Plan, Land Development Code and policies for this area.

**Land Use / Compatibility**
The proposed land use is compatible with the R-1 Residential District and the Comprehensive Plan vision for this property.

**Lot Coverage**
No change to lot coverage has been proposed.

**Mechanicals/Utility Conduits**
All utility conduits and systems related to the solar energy system shall not be visible from the street and from neighboring residential properties. Additional screening may be required, as determined by the Development Services Department.

**PLAN COMMISSION DISCUSSION**
On September 26, 2017, a public hearing was held before the Plan Commission. The petitioner's contractor was in attendance. Three neighboring residents attended the meeting. Certified letters were sent out to all property owners within 330 feet of the petitioner's property. The neighboring residents voiced concern over the solar panel's reflectivity. The contractor, John Ailey, addressed the comments of the residents and explained the reflectivity patterns of the panels. The residents seemed content following the petitioner's comments.

**PLAN COMMISSION MOTION**
On September 26, 2017, the Plan Commission, by a vote **of 6-0**, moved to recommend to the Village Board to approve the Environmental Clean Technology review for a roof-mounted solar energy system at 15613 Plum Tree Drive, as fully referenced below.

**DEVELOPMENT SERVICES, PLANNING AND ENGINEERING COMMITTEE DISCUSSION**
Assistant Village Manager/Director of Development Services Karie Friling presented the petition in accordance with the staff report dated October 16, 2017. No comments followed the presentation and the referenced motion was made.

**DEVELOPMENT SERVICES, PLANNING AND ENGINEERING COMMITTEE MOTION**
On October 16, 2017, the Development Services, Planning and Engineering Committee moved to recommend to the Village to approve the Environmental Clean Technology review for a roof-mounted solar energy system at 15613 Plum Tree Drive, as fully referenced below.

This case is now before the Village Board of Trustees for final consideration.

## Recommended Action/Motion

I move to approve the Environmental Clean Technology review for a roof-mounted solar energy system at 15613 Plum Tree Drive as recommended at the October 16, 2017 Development Services, Planning and Engineering Committee meeting and as fully referenced below.

**(THIS SECTION FOR REFERENCE ONLY (NOT NECESSARY TO BE READ))**

I move to approve the Environmental Clean Technology review for a roof-mounted solar energy system at 15613 Plum Tree Drive as depicted on the plan set “Plan and Construction Set” prepared by Ailey Solar Electric, dated 08/04/2017, subject to the following conditions:

1. That all building code related items shall be met;
2. That all building permits shall be obtained prior to construction;
3. That all utility conduits and systems related to the solar energy system shall not be visible from any adjacent street and from neighboring residential properties;
4. That additional screening of any utility conduits and systems related to the solar energy system may be required after installation has been completed, as determined by the Development Services Department.