



Legislation Text

File #: 2017-0441, **Version:** 1

Title/Name/Summary

15221 Cottonwood Court - Patel Solar Panels, Installation of 15.18 kW Solar Array as part of an Environmental Clean Technology (ECT) Review

History

QUICKFACTS

Project

15221 Cottonwood Court - Patel Solar Panels, Installation of 15.18 kW Solar Array as part of an Environmental Clean Technology (ECT) Review
2017-0441 / AR-17-00436

Petitioner

Dr. Dhaval Patel

Purpose

The purpose of this petition is to install and maintain a roof-mounted solar panel system at a single-family residence located at 15221 Cottonwood Court.

Requested Actions: Appearance Review (Environmental Clean Technology)

Project Attributes

Address: 15221 Cottonwood Court

P.I.N.(s): 27-18-104-043-0000

Parcel Size: 23,040 SF

Building Size: 3,365 SF

Comprehensive Plan Planning District: Centennial Planning District

Comprehensive Land Designation: Single Family Residential

Existing Zoning: R-1 Residential District

Existing Land Use: Single Family Home

Surrounding Land Use:

North: R-1 Residential District - Single Family Home

South: R-1 Residential District - Single Family Home

East: R-1 Residential District - Vacant

West: R-1 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.

On December 19, 2016, the petitioner received Board approval to install a geothermal renewable energy system in the front yard of the same house as the current petition.

PROJECT DESCRIPTION & CONTEXT

The petitioner is proposing to install and maintain 15.18 kW interactive solar array, comprised of forty-six (46) photovoltaic (PV) solar panels at a single family home located in the Arbor Pointe Subdivision. The solar panels will be located on the south and east facing gabled rooftops of a single-family residence located at 15221 Cottonwood Court. 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 05/19/2017 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 15.18 kW, grid-tied photovoltaic (PV) installation, comprised of (46) forty-six "Panasonic 330W" modules (panels) arranged in four (4) groupings. The total area of the array will occupy approximately 840 SF, or 27% of the approximately 3,100 SF roof area. 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.

Two (2) "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.

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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 840 SF in area while the rooftop is approximately 3,100 square feet, equaling 27% rooftop coverage.

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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 Mr. Patel’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 Patel 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 60-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.

This project was originally scheduled for the July 11, 2017 Plan Commission meeting. The petitioner failed to send out certified letters notifying his neighbors of the Plan Commission meeting however. As a result, the meeting was rescheduled for July 25, 2017.

PLAN COMMISSION DISCUSSION

On July 25, 2017, a public hearing was held before the Plan Commission. The petitioner and his contractor were in attendance. No one from the general public attended the meeting, although certified letters were sent

out to all property owners within 330 feet of the petitioner's property. Dr. Patel, the petitioner, addressed the Plan Commission to state that he believes the review and approval process for environmental clear technologies took too long, which resulted in lost opportunity for ROI, since upon completion of the installation of this project, the petitioner is eligible to earn solar renewable energy credits, or "SRECs". An SREC is basically a rebate for PV system owners. But instead of one big payment based on capacity (e.g., \$1.00/watt), the rebate is based on solar electricity generation, and thus paid out over time. PV system owners receive an SREC every time they generate 1,000 kWh of electricity from their PV panels, which they can then sell.

PLAN COMMISSION MOTION

On July 25, 2017, the Plan Commission, by a vote **of 5-0**, moved to recommend to the Village Board to approve the Environmental Clean Technology review for a roof-mounted solar energy system at 15221 Cottonwood Court, as fully referenced below.

DEVELOPMENT SERVICES, PLANNING AND ENGINEERING COMMITTEE DISCUSSION

With consideration of the petitioner's time in mind, an allowance has been made to bring this project directly before the Development Services, Planning and Engineering Committee and Board of Trustees on the same night, August 21, 2017. Had this allowance not been made, a decision on the approval of this project would have been pushed back by more than one (1) month, as the next Board meeting is scheduled for September 5, 2017.

DEVELOPMENT SERVICES, PLANNING AND ENGINEERING COMMITTEE MOTION

On August 21, 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 15221 Cottonwood Court, 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 15221 Cottonwood Court as recommended at the July 25, 2017 Plan Commission 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 15221 Cottonwood Court as depicted on the plan set "Plan and Construction Set" prepared by Ailey Solar Electric, dated 05/19/2017, 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.