

City of Culver City, California
City Council Agenda Item Report

Meeting Date: 01/22/08		Item Number: <u>A-2</u>	
AGENDA ITEM: 1) Introduction of an Ordinance Establishing a Mandatory 1 Kilowatt Solar Photovoltaic Requirement for Each 10,000 Square Feet of Gross Floor Area of New Construction for Commercial and Multi-Family projects; and 2) Adoption of a Resolution Establishing the Amount and Process for the Collection, Utilization and Return of In-Lieu Fees Contemplated by the Ordinance.			
Contact Person/Dept.: Craig Johnson/ Building Safety Division		Phone Number: (310) 253-5802	
Fiscal Impact: Yes ☒ No ☐		General Fund: Yes ☒ No ☐	
Public Hearing: ☐		Action Item: ☒ Attachments: ☒	
Public Notification: Major commercial, industrial and multifamily builders on file (01/03/08); Master Notification List (1/16/08).			
Department Approval: Sol Blumenfeld (01/14/08)		City Attorney Approval: Carol Schwab (by H. Baker)(01/15/08)	
Fiscal Impact Review: Jeff Muir (01/15/08)		City Manager Approval: Jerry B. Fulwood (01/16/08)	

RECOMMENDATION:

Staff recommends the City Council:

1. Introduce an ordinance establishing a mandatory 1 kilowatt ("kw") solar photovoltaic requirement for each 10,000 square feet of gross floor area of new construction, or fraction thereof, for commercial, industrial and multi-family projects. This requirement would not apply to one and two family homes, renovations and additions, parking garages and parking structures; and,.
2. Adopt a resolution establishing the amount and process for the collection, utilization and return of in-lieu fees contemplated by the Ordinance.

BACKGROUND / DISCUSSION:

On June 18, 2007, the City Council directed staff to develop a Solar Photovoltaic Ordinance subject to approval of the California Energy Commission ("CEC"). The intent of the ordinance is to require photovoltaic electricity production for on-site energy consumption and reduce carbon emissions generated by buildings. A 1 kW solar voltaic system produces 1,151 kilowatt hours ("kwh") annually which, in turn, reduces carbon emissions by 940 pounds each year.

On June 21, 2007, the CEC unanimously approved Culver City's application for a "Locally Adopted Energy Standard," with one revision. The previously proposed

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"one empty conduit" requirement for projects not qualifying for mandatory solar photovoltaic, as set forth in the draft ordinance, was not approved by the CEC and as such has been removed from the proposed Ordinance. (Attachment 1)

On July 16, 2007, staff returned to City Council with a revised ordinance based upon the CEC's approval. At that time staff clarified that the ordinance was intended to apply to all new construction, with the exceptions noted above, regardless of size. However, the Council had several questions and concerns. Staff utilized the time Between the Council's discussion on July 16 and this evening's presentation, to refine the proposed ordinance. Therefore, the following additional items are being presented as part of this evening's item for the City Council's consideration. (1) Clarifying the minimum project size and building additions vs. new construction, (2) rounding to meet the required fractional equivalent for a required photovoltaic system, (3) in lieu payment and (4) on-site installation options. Due to these changes to the Ordinance, it must be re-introduced. However, staff has confirmed with the CEC that the ordinance does not need to return to them for approval prior to Council's adoption.

Additionally, responses to the questions posed at prior meetings are presented below:

- 1. Required thresholds – Does the requirement apply to projects less than 10,000 sq. ft.? What is the requirement for projects 10,000 sq. ft. or greater and how is the project requirement established when the area calculation does not result in a whole number? Is the square footage determined by the footprint of the building?**

The revised floor area threshold requirement in the proposed Ordinance now applies only to new construction projects of 10,000 sq. ft. or greater with the requirement determined by the gross floor area rather than building footprint. For example, a qualifying three-story building with 3,334 s.f. per floor would meet the minimum 10,000 s.f. threshold. (Qualifying projects include commercial, industrial and multifamily residential projects. One and two family structures, garages and parking structures are exempted from the proposed Ordinance).

With regard to projects of 10,000 s.f. or greater, the project applicant will be required to install 1 kw of solar photovoltaic, or fraction thereof. For example, a 15,000 s.f. qualifying project would be required to install 1.5 kw of solar energy production; a 28,000 s.f. qualifying project would be required to install 2.8 kw, and so on. Solar systems range in size from 175 watt to 200 watt panels. As such, it is possible that new construction projects can meet the proposed energy requirements in fractional energy loads. Staff recommends rounding

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down to the nearest whole number to establish the required number of photovoltaic energy panels. Thus the calculation to establish the total number of required panels is determined by multiplying the project square footage by 0.1 (to determine the total required energy production capability of the system in watts) and dividing that number by the energy production capability (in watts) of a single panel of the type utilized by the project, then rounding down to the nearest whole number to determine the total number of panels required.

Example:

15,000 sq ft x 0.1 = 1500 watts total system requirement

1500w / 175-watt panels = 8.57 panels

1500w / 200-watt panels = 7.5 panels

Rounded down to nearest whole number = 8 panels required at 175 watts each or 7 panels required at 200 watts each

Section 15.02.1005 of the proposed Ordinance has been revised accordingly:

“For qualifying projects, the number of panels required for any given system shall be the total required energy production of the project, divided by the energy production capability of a single panel as specified on the project, rounded down to the nearest whole number.”

The systems can typically be accommodated on new project roof areas, even when there is significant gross floor area in a project. Each panel is approximately 4' x 6' so in the 8 panel system described above, only 192 sq. ft. of roof or surface area would be required. If a project was 75,000 sq. ft., 37 panels would be required at 200 watts per panel, which would only require 888 sq. ft.

2. Does the requirement apply to building additions?

As currently proposed, all qualifying new construction projects greater than 10,000 sq. ft. must conform to the proposed Ordinance. The revised ordinance is directed at new building projects and specifically excludes renovations or additions to existing buildings and one and two family residences, garages and parking structures. Section 15.02.1005 of the proposed Ordinance provides that *all new buildings* with 10,000 sq. ft. or more of gross floor area are subject to the requirement to install photovoltaic systems.

It is important to note that the Building Code identifies alterations and new construction as new freestanding buildings and several smaller areas of

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additions. In the event that there is a dispute about the application of the Ordinance, a building permit applicant may file an appeal with the City's Building & Safety Board of Appeal.

3. Other than solar photovoltaic, what alternate energy production could be used to satisfy the requirement?

Staff originally proposed to the CEC that the requirement include solar hot water heating or other renewable energy sources as alternates. The CEC staff specifically required that other alternate energy sources be excluded due to the energy output of other means being much more unpredictable. The output of solar photovoltaic systems are reasonably predictable based on the type of panels, the mounting configuration of the panels, the annual percentage of cloud cover of the specific area (in this case Culver City), and the estimated dust coverage of the solar panels.

Staff has investigated with other cities the potential use of windmills to satisfy the alternate energy requirement. These cities have reported neighborhood complaints related to noise and view problems associated with windmills. Due to these concerns, staff does not recommend that windmills be included as an alternate means of complying with the Ordinance. An individual may nevertheless voluntarily install a windmill on their property, provided, they are able meet all City Building and Zoning Code requirements, as well as all other applicable County requirements.

4. Can a project applicant install a solar photovoltaic system on another building rather than pay the in-lieu fee?

The proposed Ordinance provides that a project applicant who is unable to meet the solar photovoltaic requirement as part of a proposed project because it is infeasible or impractical to do so because of spatial constraints, may elect to meet their requirement in two options:

- Pay to the City an in-lieu fee in an amount equivalent to the cost of the required solar photovoltaic system. The in lieu fee would then be used for the installation of a solar photovoltaic system on existing City buildings. This action would require that the City Council adopt a resolution outlining the process to utilize the collected funds for installation on existing city buildings; or
- Install a solar photovoltaic system equivalent to the requirement on another location on the property as approved by the Building Official.

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5. What are the exceptions to the requirement? Should the discretion to waive the requirement be placed with the Community Development Director rather than the Building Official?

The proposed Ordinance provides that the Building Official may waive the requirement where it is satisfied through other means or is unduly burdensome or impractical. For example, it may be waived where a project has a LEED Certification and is meeting the low energy impact intent of the Ordinance without any solar photovoltaic system being installed. In such a situation, it may be acceptable to waive the requirement.

Consistent with the Building Official's purview over most of the Building Code, the discretion to waive such requirement most appropriately resides with the City's Building Official, however, such matters may also be referred City's Building Safety Appeals Board or to the Community Development Director who may refer the matter to the City's Appeals Board for review.

To illustrate a sample project, the following example is provided:

A three story building with 3,334 sq. ft. of gross floor area per floor would meet the minimum 10,000 sq. ft. qualification requiring installation of a 1 kw photovoltaic system (3,334 sq. ft./floor x 3 floors = 10,002 Sq. ft. of gross floor area). A 1 kw system would cost approximately \$11,000 and the estimated payback would be 16.5 years. However, due to the added energy savings for a project, if the system is financed as part of overall building construction, this payback may produce a positive cash flow of \$3.00 per month or \$34 per year based on a 30 year loan and including Federal tax credits and State tax rebates. The system will also produce energy savings of 1,151 kw hours per year resulting in the economic benefit of energy savings irrespective of project financing. As proposed, the proportionate cost for the energy system is less than one-half of one percent of the overall building construction cost.

FISCAL ANALYSIS:

From the City's perspective there will be less reliance upon utilities and less UUT revenue generated on a per project basis. The 10,000 sq. ft. threshold means that the effect will be small. (For example, if the proposed Ordinance had been in full effect in FY 06-07, it is estimated there would have been a loss of \$836 in UUT revenues for all qualifying projects).

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ATTACHMENTS:

1. Staff Reports of June 18th and July 16th, 2007
2. Application to the California Energy Commission
3. Proposed Ordinance
4. Proposed Resolution

MOTIONS:

That the City Council:

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2. Adopt a Resolution establishing the amount and process for the collection, utilization and return of in-lieu fees contemplated by the Ordinance.