



# Planning & Transportation Commission

## Staff Report (ID # 13695)

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**Report Type:** Study Session **Meeting Date:** 10/27/2021

**Summary Title:** Enhancing Electrification in Palo Alto

**Title:** Study Session: Staff Recommends the Planning and Transportation Commission (PTC) Conduct a Study Session Regarding Furthering the Electrification of Buildings in Palo Alto by Amending the Municipal Code to Reduce Review by Planning Staff and Thereby Streamlining Permitting Processes.

**From:** Jonathan Lait

### Recommendation

Staff recommends the Planning and Transportation Commission (PTC) conduct a study session regarding furthering the electrification of buildings in Palo Alto by amending the municipal code to reduce review by planning staff and thereby streamlining permitting processes.

### Executive Summary

The City of Palo Alto continues to advance policy and practices to reduce greenhouse gas emissions. Specifically, the City of Palo Alto aims to reduce greenhouse gas emissions 80 percent below 1990 levels by 2030.<sup>1</sup> To achieve this goal, the City has adopted the Sustainability/Climate Action Plan (S/CAP) and is currently updating the S/CAP.

One key strategy to reduce emissions is to shift homes and commercial buildings away from natural gas to electricity (that has not been produced by coal fired power plants). Recently, the City Council, the Council Sustainability and Climate Action Plan Ad Hoc Committee, and the Utilities Advisory Commission have taken an interest in accelerating and furthering efforts to advance roof top solar installation, battery storage, electric vehicle charging infrastructure, heat pumps, and other infrastructure that allow buildings to decrease or in some cases eliminate reliance on fossil fuels.

To further the proliferation of these technologies at a pace that can combat climate change, the City of Palo Alto seeks to speed up the permitting process, reduce barriers, and ultimately make

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<sup>1</sup> <https://www.cityofpaloalto.org/City-Hall/Sustainability/SCAP>

it faster for property owners and qualified professionals (contractors, etc.) to install these technologies. At scale, these can have a significant impact in reducing emissions in Palo Alto.

Staff present several policy questions for discussion regarding the tradeoffs of the streamlining efforts. The City could speed up permitting by reducing staff review. Reducing reviews, however, may also mean certain policies are no longer effectuated in Palo Alto. Staff seek to present some of these tradeoffs as well as other ideas regarding streamlining to the PTC for discussion in advance of proposing changes in policy, process, or practice.

## Background

Table 1 summarizes some of the common technologies to shift buildings to clean energy. The table also summarizes the reviews performed by the planning team during the building permit application review process.

<b>Table 1: Planning Review for Certain Clean Energy Technologies</b>		
	<b>Single Family Residential and/or Duplex</b>	<b>Commercial (including Multi-Family Residential)</b>
<b>Electric Vehicle Charging Equipment (EVSE)</b>	(1) Planning does <i>not</i> review the installation of EVSE in these properties. (2) Questions may arise about maintaining interior garage space sufficient for continuing car parking.	(1) Required parking spaces are provided. (2) Ensuring compliance with the Americans with Disabilities Act. (3) Ensure location of EVSE does not block parking, drive aisle, etc. (4) Ensure trees continue to provide required canopy and coverage. (5) Location of new transformer(s), utility switchgear(s) are screened from public view, and does not block parking or drive aisles.
<b>Solar Panels</b>	(1) If installed a few inches from the roof, no planning review required. (2) When reviewing solar panels on a roof or a structure (such as on top of a carport) the following aspects are reviewed for compliance: <ol style="list-style-type: none"> <li>Height</li> <li>Daylight plane</li> <li>Avoiding conflicts with potential trees (typically reviewed for accessory structures)</li> <li>Lot coverage (if not on roof of existing structure)</li> <li>Setbacks</li> <li>Placement's compatibility with historic structures</li> </ol>	
<b>Battery Storage</b>	(1) Must be located at least 4 feet	(1) Must be located at least 4 feet

<b>Systems</b>	<p>from the property line due to hazardous materials.</p> <p>(2) Location of batteries can vary. Treat batteries as minor 2 feet encroachments into the setback.</p> <p>(3) Questions may arise about maintaining interior garage space sufficient for continuing car parking.</p>	<p>from the property line due to hazardous materials.</p> <p>(2) Required parking spaces are provided.</p> <p>(3) Ensuring compliance with the Americans with Disabilities Act.</p> <p>(4) Ensure trees continue to provide required canopy and coverage.</p> <p>(5) Screened from public view, and does not block parking or drive aisles.</p>
<b>Electric Heat Pumps</b>	<p>(1) Required distance from walls can vary depending on manufacturer.</p> <p>(2) Review for noise generation.</p> <p>(3) Ensure noise producing equipment is place outside of setbacks.</p>	<p>(1) Required distance from walls can vary depending on manufacturer.</p> <p>(2) Screening required for rooftop installations.</p> <p>(3) Maximum height exception on rooftops is 15 ft.</p>

## Discussion

Planning and Development Services staff have identified some possible means to reduce the amount of time needed for application reviews. Two potentially fruitful paths are to:

- (1) Reduce requirements to specific objective standards that can be clearly communicated to applicants and more quickly reviewed by staff; or
- (2) Change policies in order to eliminate certain code requirements and eliminate planning review (or at least eliminated review of certain items).

The following section further details these two strategies. Staff seek PTC input regarding the pros and cons of each approach. Staff will also be interested if PTC members identify additional approaches.

### Reduced Review

This approach focuses on reducing the time between permit application and permit issuance by clearly communicating requirements so that application materials are more legible and provide the required information when submitted. Staff could also work to eliminate or clarify any ambiguous language in the municipal code so that standards are clear and can be objectively verified. Through clarity, objectivity, and better proactive communication, applicants may provide improved applications.

Improved applications reduce the amount of time required to review, and reduce the number of comments staff must provide to applicants. This can reduce the overall amount of back-and-forth communication between applicants and the City. For example, a checklist of requirements for solar panel installation on a rooftop might include the height of the panels above the roof, ask for an illustration of the placement of the panels in plan view, or the location of any protected trees.

A related option is to create objective standards that must be met. If an applicant does not want to meet an objective standard, then further—and longer—review is needed. Still, the review of the application to see if the objective standard has been met requires staff time.

### Policy Changes and Eliminated Code Requirements

By altogether eliminating certain code requirements, the City can decrease the burdens on applicants and staff, leading to faster review times. Eliminating requirements can certainly increase speed of permit review, though in some cases the elimination of the requirement may limit the furtherance of certain policy goals. Some examples are provided below to illustrate the possibilities.

- **Distance of rooftop solar panels above the roof** – The City could develop a maximum dimension for the placement of rooftop solar panels. As Figure 1 below illustrates, panels may need to be placed at different angles depending on the roof slope, the location of the building, and the quality of the sunlight on the roof/panels. Developing a standard for this dimension might eliminate the need to review rooftop solar applications for height and daylight plane.

Staff plan to review solar applications to identify an appropriate standard that might be broadly applicable. Shifting to this requirement could significantly reduce or eliminate planning review of many rooftop solar installations. If pursued, the building inspector would verify that the installation complied with the allowed dimension. Please note, an installation that needed to vary from this standard may require planning review.

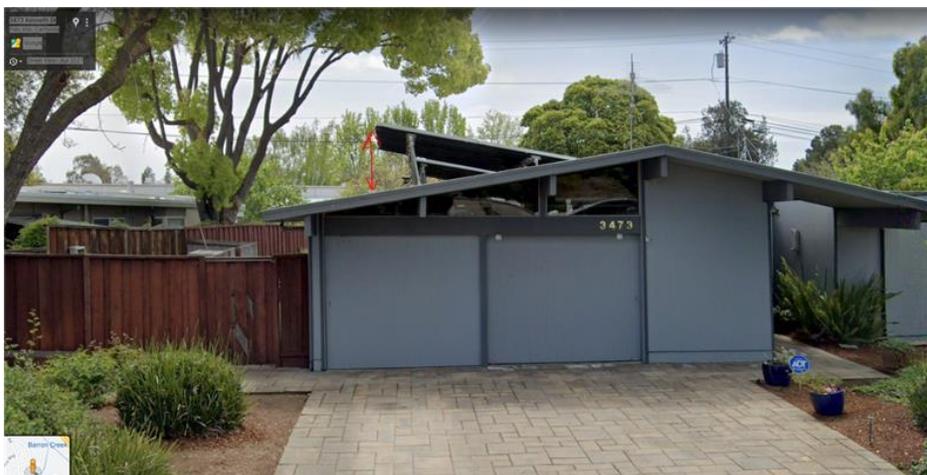


Figure 1: Example of Solar Panel Dimension Above the Roof of the Home

Planning would still review solar installations when solar panels are proposed in conjunction with a larger application.

- **Tree canopy vs. solar panel coverage** – Currently, the City’s canopy coverage favors ensuring sufficient trees are planted and maintained in order to cover the property with tree canopy. This has numerous environmental, aesthetic, and quality of life benefits. The trees can, in some cases, limit the use of solar panels. For example, if a parking lot were covered with solar panels, that could generate significant green energy. The canopy coverage requirements might reduce the effectiveness of the panels and create conflict.
- **Tree removal** – Overall, the City discourages the removal of trees and prohibits removal in some instances. This approach can limit the placement and/or effectiveness of some solar installations. In addition, planning review is required to verify the location and potential impacts of existing trees. Safeguarding trees and understanding if the installation of technologies poses any threats to trees is an important role for planning review.

The City does, however, have rules dictating tree removal and the process for tree removal. If tree removal is not stated as part of the scope of work, the City could assume that no trees will be affected in the installation of the technologies and planning or urban forestry review is not needed. This does create some risk that trees or the tree protection zone are not respected, and may affect some of the trees.

During plan check review for new construction (additions, new structures) or work that requires trenching the City’s “T-1” tree protection sheet is required to be included in the permit submission.<sup>2</sup> The T-1 sheet provides regulations pertaining to tree protection, site plan requirements, and tree disclosure information that the applicant completes. If the applicant indicates that no trees exist or that no work is being done within the tree protection zone (TPZ) then Urban Forestry does not review the permit. Verification of the applicants statements regarding the scope of work related to trees is currently still required to be done by Planning staff.

- **Solar shingles and historic structures** - Solar shingles are an opportunity for achieving solar through the very shingles of the roof—instead of installing panels. Should the City allow listed and registered historic homes—including homes in historic districts—to use this material? Is review of the historic homes required? Perhaps if the solar shingles are replacing composite shingles they are compatible, whereas if solar shingles are replacing slate, terra cotta, or other materials on historic structures then staff review is required.
- **Location of noise producing equipment** – Many technologies produce mechanical noise, including batteries and heat pumps. The City’s noise ordinance (PAMC 9.10) requires such

<sup>2</sup> [https://www.cityofpaloalto.org/files/assets/public/development-services/planning-review/5.-trees/special-tree-protection-instruction-sheet-t-1\\_04092020.pdf](https://www.cityofpaloalto.org/files/assets/public/development-services/planning-review/5.-trees/special-tree-protection-instruction-sheet-t-1_04092020.pdf)

noise be no greater than 66 decibels (dB) at the property line (at the lowest threshold).<sup>3</sup> In addition, the municipal code often does not allow noise producing equipment in setbacks. If, however, the manufacturers can demonstrate that the noise is below the threshold, then it might make sense to allow noise producing equipment in the setbacks, as it still complies with the noise ordinance.

The elimination of code requirements may be more appropriate and fruitful for some technologies than others. For example, the City is exploring using SolarAPP+<sup>4</sup> for review of small scale (10kw or less) solar installations. This app allows applicants to input the information about their solar installation and with the click of a button their application information is checked against the City's standards and requirements. In the field, the inspectors verify if that the installation adheres to the requirements that are also part of the permit. The SolarAPP+ could significantly decrease the time required for applications for rooftop solar. Staff are continuing to work with the app creator to understand if certain planning code requirements can be incorporated into the app and it's automatic review or if the app cannot support their inclusion.

Staff seek PTC's input regarding these dual approaches to streamlining the electrification process. Input will be incorporated into draft ordinances that would come to the PTC for review.

### **Environmental Review**

This report and study session do not constitute a project under the California Environmental Quality Act.

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<sup>3</sup> The noise limit thresholds range from 66 to 76 decibels (dB), with the lower thresholds applied to residential neighborhoods and the higher thresholds applied to areas at or adjacent to main corridors, expressways, freeways, and Caltrain.

<sup>4</sup> <https://solarapp.nrel.gov/>

<sup>5</sup> Emails may be sent directly to the PTC using the following address: [planning.commission@cityofpaloalto.org](mailto:planning.commission@cityofpaloalto.org)