MEMORANDUM

DATE: October 29, 2019

SUBJECT: Potential Climate Action Roadmap Actions

TO: Commissioner Jim Flanagan, Solar and Green Building Committee Member
Patrick Tallarico, Manager, Office of Sustainability

FROM: David Freedman, Solar and Green Building Committee Member

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At the Sustainability Commission's October 15 meeting, the Commissioners discussed implementation of the City's Climate Action Plan (CAP) and provided direction to the Solar and Green Building Committee to continue researching proposals that would assist the City in achieving the goal in the CAP and Sustainability Plan to reduce greenhouse gas (GHG) emissions to 80% below 1990 levels by 2050. This Memorandum describes GHG reduction measures other California cities have recently implemented, how those measures could be implemented in Palm Springs, and potential barriers to their local implementation.

1. Commercial Buildings GHG-Free Energy Requirements

San Francisco recently adopted an ordinance to transition private commercial buildings of 50,000 square feet and larger to 100 percent GHG-free or renewable electricity. The legislation calls for the city's commercial buildings of at least 500,000 square feet in gross floor area to procure 100 percent GHG-free or renewable electricity by any combination of on-site generation or purchase from the city's electricity providers by 2022. Starting in 2024, additional buildings will be subject to the requirement, encompassing by 2030 all commercial buildings 50,000 square feet or larger.

This measure would be relatively easy to adopt in Palm Springs, to take effect at the same time as the launch of Desert Community Energy (DCE) in Palm Springs in September 2020. DCE will offer a 100% carbon-free product, and all electricity users in the City will automatically be enrolled in that product unless they opt down to DCE's 50% carbon-free product or opt out of DCE and remain with Southern California Edison (SCE). SCE offers a Green Rate Program under which it purchases renewable energy from independently owned solar farms in California on behalf of the customer, who then purchases this renewable power from SCE. SCE also offers a Community Renewables Program, under which the customer enters into an agreement with a California renewable energy provider to buy a share of their energy output. SCE purchases the electricity that is produced under the agreement – up to 120 percent of the power forecasted to meet the customer's usage needs – and SCE pays the customer directly, via bill credits.

City Council would need to determine which categories of commercial buildings would be subject to the requirements to procure 100 percent carbon-free or renewable electricity, which can be satisfied though on-site generation, remaining with DCE's carbon-free product or participating in SCE's Green Rate or Community Renewables Programs. Council would also need to determine whether the requirements should be phased in, as is the case in San Francisco. Staff time would

be necessary to administer the requirements, including establishing rules for verification of compliance with them and enforcement of violations. Approval of the California Energy Commission as discussed in Section 3 below would most likely not be required, because this measure does not impose any change on the quantity of electricity consumed, just the sources of electricity.

The key barrier to implementation at this time is that DCE has not yet set the rates for its electricity products or its net energy metering policies for customers with on-site generation from solar panels. The current expectation is that SCE's carbon-free product will cost 5% to 10% above the SCE base product; however, that will not be certain until the DCE Board sets electric rates in advance of the expected launch in 2020. DCE's and SCE's rates will fluctuate in the future, so Council may want to grant authority to the City Manager or designee to suspend the requirements if the DCE carbon-free option costs more than 10% above the SCE base product. A similar provision is in the San Francisco ordinance, at a 5% cost differential threshold.

2. Indoor Cannabis Cultivation Facilities Solar Requirements

There are currently 14 cannabis permit holders operating in the City, four of which hold cultivation licenses. There are also non-operating permit holders with cultivation licenses and pending permit applications for cannabis facilities that include cultivation.

According to a recent article in the Desert Sun, in the SCE service area encompassing the western side of the Coachella Valley, cannabis cultivation facilities use about 235 megawatts a day, or the equivalent of about 100,000 California homes. The energy used by these facilities could represent 1-2% of overall usage. Indoor cannabis cultivation facilities (which includes all those in Palm Springs) generally use about 25 times what a standard industrial development may need, to power ventilation systems, overhead fans and light bulbs that run 12 to 18 hours a day. The Desert Sun article also discussed a Desert Hot Springs cannabis business that operates a solar project consisting of more than 700 solar modules set up on carports, which offset about 30% of the energy used at the facility.

The cannabis industry is new in California and there are no state or local codified energy standards for it. Recognizing this gap, the Solar and Green Building Committee met on June 4 with Jocelyn Kane, Vice President of the Coachella Valley Cannabis Alliance Network (CVCAN), to discuss sustainability considerations for the industry. Ms. Kane advised that because of federal rules limiting access of the cannabis industry to banks, it was difficult for the industry to obtain financing for solar equipment. The Desert Hot Springs cannabis business is the first in the industry to use commercial-scale solar.

A substantial amount of research is necessary to determine whether the City could establish a solar policy for indoor cannabis cultivation. Initially, a field trip to the Desert Hot Springs facility should be organized to better understand its operation. Even if a solar policy for indoor cannabis cultivation would not be practical because of the financing difficulties, cannabis businesses could be among those subject to the requirement to obtain all their energy needs through 100 percent GHG-free or renewable electricity, as discussed above. This requirement can be added to the conditions for a cannabis cultivation permit set out in Palm Springs Municipal Code Section 5.55.096.[1] In addition, the Sustainability Commission can develop a sustainability package for the cannabis industry supply chain, which would include energy and water conservation and waste reduction.[2]

[1] The draft ordinance presented for discussion at the October 24 meeting of the City Council Cannabis Standing Subcommittee adds a requirement that a cannabis cultivation facility have sufficient power availability to meet the requirements of the proposed use.

[2] Section 5.55.096 currently requires a cannabis cultivation facility to include adequate measures to address the projected energy demand and minimize use of water for cannabis cultivation at the site.

3. Non-Residential and Major Retrofits Solar and Energy Efficiency Requirements

The recommendations to City Council that the Sustainability Commission approved in December 2016 included a solar requirement for major additions to and remodels of single-family residences. City Council did not include this recommendation in the solar policy it adopted in January 2018, which covers only new residential construction.

At the time of the Sustainability Commission decision in December 2016, only Sebastopol had extended a solar requirement to retrofits. This requirement is now included in several ordinances that other California cities recently adopted. West Hollywood's ordinance requires new residential, nonresidential, and mixed-use buildings with a gross floor area of 10,000 square feet or greater, or a major remodel that causes residential, nonresidential, and mixed-use buildings to become 10,000 square feet or greater, to install one of following three sustainable roof measures:

a. Photovoltaics (PV), sized to offset a minimum of 15% of the building's total estimated electrical usage, or

b. Solar thermal systems (i.e., solar hot water), with a minimum 0.50 solar fraction, or

c. Vegetative roof, covering a minimum 30 percent (30%) of the roof area not occupied by mechanical equipment or access stairways as a landscaped roof.

Carlsbad's ordinance requires all new non-residential buildings and renovations to existing non-residential buildings with a building permit valuation of $1,000,000 or higher that affect 75 percent or more of the existing floor area or renovations that increase roof area by greater than or equal to 2,000 square feet to include a PV system that meets one of the following minimum size requirements:

1) offsets 80 percent of the building's electrical demand;
2) generates a minimum of 15 kilowatts per 10,000 square feet of gross floor area; or
3) generates a minimum of two kilowatts for buildings under 10,000 square feet of gross floor area.

Carlsbad also requires all renovations of existing single-family and multi-family residential buildings with a building permit valuation of $60,000 or more to include energy efficiency measures, such as insulation, cool roofs (when the roof is being replaced) and LED lighting.

The Davis ordinance requires new nonresidential buildings to install a solar PV system sized to offset approximately 80% offset of the building's modelled annual electric load. Santa Monica requires major additions to one- and two-family dwellings shall install a solar PV system with a minimum total wattage of 1.5 times the square footage of the addition. All major additions to multi-family and non-residential buildings are required to install a solar photovoltaic system with a minimum total wattage of two times the square footage of the addition's footprint. Santa Monica also requires new high-rise multifamily housing and non-commercial buildings to have a solar system generating a minimum of two watts per square foot of building footprint.

It should be noted that any mandatory solar and energy efficiency measures that are more stringent than the Energy Code require approval of the California Energy Commission. Local governmental agencies may adopt and enforce energy standards for newly constructed buildings, additions, alterations and repairs to existing buildings provided the Energy Commission finds that the local standards will require buildings to be designed to consume no more energy than permitted by the Energy Code. Local jurisdictions are required to apply to Energy Commission for approval, documenting the supporting analysis for how the local government has determined their proposed energy standards will save more energy than the current Energy Code and the basis of the local government's determination that its standards are cost effective.

There are recent studies that demonstrate cost-effectiveness of the measures adopted by other California cities. While these studies cover each climate zone in the state and thus include data for Climate Zone 15 where Palm Springs is located, it would be helpful to have a cost-effectiveness study done that takes the data from the state-wide studies and specifically analyzes the situation in Palm Springs. Because the state-wide studies use SCE electric rates, it will be necessary for DCE to set its rates before any local cost-effectiveness study is done.

4. Electrification Requirements

At a workshop on the 2022 Energy Code on October 17, Energy Commission staff stated that the 2019 standards is the last code cycle focused primarily on the zero net energy goal. The 2022 and subsequent standards cycles will have building decarbonization as the primary goal.

In recognition of the decarbonization goal, in July, Berkeley became the first city in the country to ban gas hookups in most new residential construction. Half a dozen other California cities, including San Jose and Santa Monica, have approved building codes this year incentivizing or requiring electric appliances in new buildings. San Francisco is considering a similar measure.

Santa Monica does not prohibit gas in new buildings but requires mixed-fuel buildings to be more energy efficient than all-electric buildings. Santa Monica's ordinance states that for new pool construction, if the pool is to be heated, an electric heat pump water heater or a solar thermal system shall be used for such heating. The Marin County ordinance also requires mixed-fuel buildings to be more energy efficient than all-electric buildings and requires them to be prewired for future electric cooking.

According to a recent article in the Los Angeles Times, the California Public Utilities Commission recently voted to allow $1 billion in annual energy efficiency funding to be spent, in part, on rebates for consumers to replace gas appliances with electric versions. The Legislature has allocated $200 million toward programs to reduce emissions from buildings, including incentives for low-emissions space and water heaters.

The Los Angeles Times article discusses opposition by Southern California Gas Co. (SoCalGas) to the electrification efforts currently occurring in California, and SoCalGas opposition to any electrification measures in Palm Springs should be expected. Energy Commission approval would be required if a measure requiring additional energy efficiency for mixed-fuel buildings is included. Existing state-wide studies demonstrate the cost-effectiveness of the electrification measures recently adopted, but a local study would be helpful in this case as well.

5. Electrical Vehicle Supply Equipment (EVSE) Requirements

Many California cities are adopting ordinances requiring buildings to install EVSE infrastructure. The California Green Building Standards Code (CalGreen), which will also enter effect January 1, 2020, contains requirements for EVSE infrastructure for new residential and commercial buildings. AB 1236 passed in 2015 requires cities and counties with a population of less than 200,000 residents to adopt an ordinance by September 30, 2017, that creates an expedited and streamlined permitting process for electric vehicle charging stations. The City has not yet adopted the required ordinance, so should do so as soon as possible to facilitate EVSE installation.

The Office of Sustainability has been working on with the Engineering Services Department for the past several months on the City's program to install additional EV chargers throughout the City. The City has worked with SCE to identify the infrastructure needed to support this expansion and is able to start to develop an RFP to secure chargers and charger maintenance services. The cost to the City will be approximately $200,000, in addition to the $80,000 that will be covered by grants. The Office of Sustainability will be working with Engineering to finalize these numbers and submit

a request for funding from Measure J or the General Fund, which would need City Council approval. Any GHG reductions as a result of the City's EV chargers should be included in the GHG inventory.

The Solar and Green Building Committee recommends that the City rely on the CalGreen standards and concentrate its resources on the program to install additional EV chargers throughout the City. Should these new chargers together with the ones already installed be insufficient to satisfy demand, the City could consider an ordinance going beyond the CalGreen requirements.

6. Home Energy Efficiency Label / Rebates

At the October 15 meeting, the Commission approved a home energy label pilot program. Certain cities (e.g., Berkeley, Portland) require a label at the time of listing or sale of a house but obtaining a home energy score is also useful to homeowners considering an energy efficiency upgrade. The Commission authorized a $10,000 pilot program, which will provide up to 100 homeowners a rebate of $100 each upon submission of a completed energy report.

This type of program could serve as a precursor to a more robust program that could be done when the City makes the switch to DCE, including providing rebates for energy efficiency upgrades carried out by low and middle-income DCE customers. The program would be subject to DCE Board approval and input from DCE's Community Advisory Committee, but the City's initial work could provide important lessons learned about the effectiveness of such a program. As a condition to participation in the program, rebate recipients will be asked to participate in a survey to see if they carried out any energy efficiency measures based on their energy report.

Implementation of the pilot program will require City staff time. As there are only three main audit or labeling systems and available lists of those certified to perform the work, it is not expected that implementation will require substantial staff time.

At the November 5 Committee meeting, Patrick and I would like to get your feedback on the first four measures discussed above; measures 5 and 6 are already progressing based on direction previously given by the Committee and full Sustainability Commission. Implementation of the home energy efficiency label / rebate pilot program approved by the Commission at its October 15 meeting will be a separate item for discussion at the November 5 Committee meeting.