

DOCKETED

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TOWN OF WINDSOR AGENDA REPORT

Town Council Meeting Date: October 16, 2016

To: Mayor and Town Council
From: Kim Jordan, Planner III
Subject: Ordinance Adopting All-Electric Reach Code

Recommendation to Council:

Hold second reading, by title only, and adopt an ordinance amending Windsor Municipal Code Title VII, "Building and Housing," to add Chapter 7, "All-Electric Residential Reach Code."

Background and Discussion:

At the September 18, 2019 Town Council meeting, the Town Council opened the public hearing and continued the item to the regular October 16, 2019 Town Council meeting.

At the September 4, 2019 Town Council meeting, staff presented a draft ordinance to amend the Town of Windsor Municipal Code Title VII, "Building and Housing," to add Chapter 7, "All-Electric Reach Code."

After receiving the staff report, public testimony and deliberating on the draft ordinance, the Town Council took action to introduce the ordinance by title only to amend the Windsor Municipal Code Title VII, "Building and Housing," to add Chapter 7, "All-Electric Residential Reach Code." The motion to introduce the ordinance was carried by a 4-0-1 vote in favor, with one abstention.

The ordinance would apply to the development of all new low-rise residential development (single-family homes, detached accessory dwelling units, and multi-family development up to three-stories). New low-rise residential development would be required to use only electric appliances and mechanical systems. The use of gas appliances and mechanical systems would not be allowed. The ordinance would not apply to: attached accessory dwelling units; alterations or additions to existing single-family, multifamily, or commercial buildings; new construction of commercial buildings; or new construction of multi-family buildings of four or more stories. The ordinance would become effective January 1, 2020, at the same time that the 2019 Building Code takes effect.

Fiscal Impact:

The recommended action will have no direct fiscal impacts on the Town's general fund.

Environmental Review:

This project is exempt from the provisions of the California Environmental Quality Act ("CEQA"), pursuant to Section 15061(b)(3) of the CEQA Guidelines, because these standards are more protective of the environment than the State Standards, and there are no reasonably foreseeable adverse impacts. Consequently, there is no possibility that the activity in question may have a significant effect on the environment. This ordinance is also exempt under Section 15308 of the CEQA Guidelines—Actions by Regulatory Agencies for Protection of the Environment, because it is an action taken by local ordinance to assure the maintenance, restoration, enhancement, or

protection of the environment.

Public comment received at and in response to the proposed all-electric ordinance, raised questions regarding the Town's determination that the ordinance was exempt from CEQA. In response to these comments, staff is providing supplemental information in support of the CEQA exemptions noted above.

Shift to All-Electric. The all-electric code requirement would require the installation of electric appliances and mechanical systems in new low-rise residential development and prohibit the installation of gas appliances and mechanical systems in new low-rise residential development. Installation of gas appliances and mechanical systems would still be allowed in new commercial development and in existing residential and commercial development. The all-electric code would not ban gas service or require existing gas service to be removed or changed to electrical service.

For new low-rise residential development, the primary change would be the requirement to use electricity for cooking, clothes drying, and space and water heating and cooling. The 2019 Cost-Effectiveness Study for Low-Rise Residential New Construction prepared by Frontier Energy, Inc. and Misti Bruceri & Associates dated July 17, 2019 ("Study") compared the energy use of all-electric single-family homes and multi-family homes to the energy use of mixed-fuel homes (homes that use electricity and gas). Table 48 of the Study shows that a code compliant mixed-fuel home would use 421 therms of fuel annually (which equals 12,335 kilowatt hours) and that the home's electricity use would be offset by the requirement to install the code required photovoltaic system, and that a code compliant all-electric home would use 5,014 kilowatt hours annually with the installation of the code required photovoltaic system. Therefore, the all-electric code compliant home would use 7,321 fewer kilowatt hours of electricity per year than the code-compliant mixed-fuel home, based on converting therms to kilowatt hours.

2019 California Building Code. The 2019 California Building Code will require new homes to be built with a photovoltaic (PV) system that is a minimum of approximately 2.8 kilowatts, or to install features that would result in an equivalent reduction in building energy use. This requirement will apply to all new single-family, multi-family and detached accessory dwelling units. Based on Table 49: Single-Family Climate Zone 2 Results Summary of the Study, an all-electric home with the code minimum PV System would use 5,014 kilowatt (5.014 megawatt) hours more electricity than a mixed-fuel home and 421 fewer therms per year. Electricity use would be reduced to 847 kilowatt (.847 megawatt) hours by installing a 4.87-kilowatt system. Based on information from Sonoma Clean Power's Rebuild Program, the typical size of a PV system installed as part of the rebuilding efforts after the 2017 wildfires is 8.5 kilowatts. Therefore, the size of the PV system installed for new low-rise residential development would likely exceed the minimum required by the Building Code, resulting in a decrease in the use of electricity. For purposes of this analysis, the Town has assumed that the average PV system installed will be a 4.87-kilowatt system, which is smaller than the current average system installed in Sonoma County, but larger than the minimum system required under the 2019 Building Code.

Potential Effects on the Electrical Grid. PG&E's service area encompasses approximately 70,000 square miles in Northern and Central California, with a service area population of nearly 16 million people. Within its service area, PG&E has 5.3 million electric distribution accounts, 4.6 million of

which are for residential customers. The all-electric code requirement under consideration would apply to new low-rise residential development within the Town of Windsor town limits. Windsor is approximately 7.3 square miles in size and has a current population of 28,565. The size and population of Windsor represent approximately 0.01 percent of PG&E's service area and contains approximately 0.18 percent of the people served by PG&E respectively.

Based on the Town's Growth Management Ordinance, the actual amount of residential growth experienced over the past ten years, and recently renewed 20-year Urban Growth Boundary, impacts on the electrical grid resulting from adoption of an all-electric code requirement for new low-rise residential development will not be significant.

The Town's Growth Management Ordinance allows for approval of approximately 150 units annually, consistent with the targeted annual average growth rate of 1.5% that is stated in the Town's 2040 General Plan. Over the next 10 years, the maximum number of units that could potentially be approved under the Town's Growth Management Ordinance is approximately 1,500, increasing the Town's population by 4,695 people. However, historic building permit data suggests that the actual number of new residential units built could be significantly less. Between 2009 and 2018, only 189 new low-rise residential units were issued permits for construction, resulting in a population increase of approximately 591 people. For the purposes of this analysis, it is assumed that the range of new low-rise residential units that potentially could be constructed in the next 10 years is between 150 and 1,500.

To compare the potential increase in energy usage resulting from the All-Electric Reach Code, the Town compared the energy usage and related infrastructure necessary to service growth under the Environmental Impact Report ("EIR") for the 2040 General Plan, which did not include All-Electric Reach Code building requirements, with the energy usage of the same development using the All-Electric Reach Code standards. The 2040 General Plan EIR estimates that single-family homes and low-rise apartments would use approximately 19,416 megawatt hours of electricity annually. The development of 150 all-electric homes over the next 10 years could result in an increase in electricity use of 75 megawatts hours annually above the 19,416 megawatt hours, an increase of less than one-half of one percent. The development of 1,500 all-electric homes over the next 10 years could result in an increase in electricity use above the 2040 General Plan EIR findings of 752 megawatts hours annually (Study, Table 49), an increase of approximately 3.9 percent. These increases presume that homeowners will not opt to install a more practical 4.87 kW PV system. If a 4.87 kW PV system is installed rather than the minimum size required by the 2019 Building Code, annual electricity use could be reduced to 13 megawatt hours (based on 150 homes over 10 years) to 127 megawatt hours (based on 1,500 homes built over 10 years).

The 2040 General Plan EIR analysis did not consider the energy savings and increased capacity provided by the recently approved floating solar project in Pond 7 at the Town's wastewater treatment plant ("Floating Solar Project"). The Floating Solar Project, which is scheduled to be in operation in November 2019, will provide approximately 2,750 megawatt hours annually. Thus, the Floating Solar Project will more than accommodate the maximum additional 752 annual megawatt hours in additional electricity usage resulting from new all-electric homes that could potentially be constructed over the next ten years. Therefore, with the completion of the

Floating Solar Project, the increase in electricity usage from the All-Electric Reach Code would not result in the need for any further electrical infrastructure beyond that examined in the General Plan EIR and is not considered a significant impact.

In addition, the estimated increase in electricity use would primarily occur during the winter months due to a shift from gas heating to electric heating. This would not result in an increased burden on the electrical grid, since demand for electricity during the winter months is lower due to cooler temperatures. The demand for electricity is highest during the summer months due to higher temperatures and the use of air conditioning.

In summary, any increase in electrical use caused by the all-electric code requirement would be small, incremental, and would occur over time and would not result in the need for any new electrical infrastructure not already examined in the 2040 General Plan EIR. In the letter from PG&E dated August 21, 2019, PG&E stated its “support for the Town’s efforts to promote efficient all-electric construction...” and that it “welcomes the opportunity to avoid investments in new gas assets that might later prove underutilized as local governments and the state work together to realize long-term decarbonization objectives.” In a follow up letter from PG&E dated October 9, 2019 (Attachment 5), PG&E stated that it is continually forecasting needs and performing upgrades to its grid to meet forecasted needs, including shifts in demand resulting from the State’s interest in moving towards electrification. As a result of these efforts PG&E will be able to meet the demands resulting from an all-electric code requirement.

New Electrical Infrastructure. The relatively small incremental increase in electrical demand resulting from adoption of an all-electric code will not result in the need for construction of new major transmission or distribution facilities or require substantial alteration of existing transmission or distribution facilities to meet projected energy demands. New development is anticipated to occur in urbanized areas where electrical service currently exists, including “in-fill” properties within incorporated town limits and unincorporated areas within the Town’s Urban Growth Boundary that are located at the edge of town adjacent to developed areas. “Sprawl” or “leap frog” development necessitating the extension of major electrical transmission or distribution lines to areas without services is not permissible by voter-approved policies.

Any new electrical service needed to serve the site of new residential development would be required to be placed underground, largely eliminating risks/vulnerabilities associated with proximity to high risk terrain or weather exposure. The Town’s utility undergrounding policies also require new development to place existing overhead electrical lines located along the property to be developed underground.

Public Safety Impacts. In 2018, PG&E announced its intent to shut off power during high-risk weather conditions to reduce/eliminate potential fire risks associated with its power lines. To date, there have been two PG&E Public Safety Power Shutoff events in Sonoma County. The first event was located in a remote unincorporated area of the county east of Windsor near the Napa-Sonoma county line. No customers in Windsor lost power during this event. The second event encompassed most of the eastern half of Sonoma County. During this event, a small area in the southern portion of the town lost power, affecting less than 5% of the Town’s population. Restoration of power began approximately 36 hours after de-energization but had not been

completed as of the writing of this report.

During PG&E Public Safety Power Shutoff events, it is possible that occupants of existing homes that have gas appliances and mechanical systems with electric ignition source, which would not be available in the event of an electrical power shut-off and any new homes constructed in conformance with the all-electric code requirement may rely on portable cooking appliances (propane-fueled barbeques, charcoal barbeques, etc.) and power generators fueled by gasoline or diesel. It is unknown how many people may turn to use these types of appliances, and no evidence exists that the use of such appliances in an all-electric home presents any greater risk than use of such appliances in a home with a fixed natural gas line. In addition, new all-electric homes will be constructed incrementally over time and will not significantly increase risks beyond what may already be present in existing homes. As such, the all-electric code requirement will not have any impacts to public health and safety.

GHG/Air Quality. The all-electric requirement would not result in impacts to GHG or air quality resulting from use of less clean burning alternative fuels that could substitute for natural gas (such as wood, propane, charcoal, gasoline). Many of these types of alternative burning fuels are already prohibited for use in interior cooking and heating appliances by building and fire codes. Electrical heating systems would be available except during a power outage or power shut-off. There is no evidence to support the conclusion that in the infrequent event of a power outage or power shut-off, which happens to occur during cold weather, residents of new, all-electric housing in the Town would turn to GHG emitting sources of heat or, even if such heat sources were used, that infrequent, short-term use of such heat sources would offset the GHG reductions from the non-use of natural gas-powered appliances the remainder of the year. As such, the all-electric code requirement is expected to have a net benefit to the environment through the reduction in GHG emissions.

Population and Housing. The All-Electric Reach Code would require all-electric appliances and mechanical systems in new low-rise residential development. Based on the Study, this requirement would not result in an increase in the cost to develop or operate all-electric homes. The biggest shift to all-electric appliances may be the requirement to use conduction or electric appliances for cooking. While some people may have a preference for gas stoves, no evidence has been provided that persons would be displaced as a result of only having an option of an electric or conduction appliance for cooking. Additionally, as stated above, the all-electric code would be implemented over time and would apply to a small number of residential units. Therefore, the all-electric code requirement would not have any environmental impacts to population and housing.

General Plan Consistency. The All-Electric Reach Code was reviewed for consistency with the 2040 General Plan. The consistency analysis primarily focused on 2040 General Plan goals and policies most relevant to the proposed action of adopting an all-electric code requirement. It was concluded that adoption of an all-electric code requirement would be consistent with the 2040 General Plan, advancing goals and policies related to energy efficiency, GHG reduction, and climate change adaptation. A determination of General Plan consistency does not require that that each and every policy in the General Plan be considered or found to be consistent. No evidence has been submitted that demonstrates adoption of an all-electric code requirement would be inconsistent with General Plan goals and policies related to reducing GHG emissions and/or

climate change adaptation.

2019 California Energy Code. As an alternative grounds for the Town’s finding that the All-Electric Code would not have any impacts on the environment that were not previously analyzed, the Town notes that the California Energy Commission adopted a Negative Declaration (ND) for the 2019 California Energy Code (Title 24, Part 6), which analyzed the environmental impacts of the 2019 Energy Code, including potential impacts associated with implementation of an all-electric code requirement (Attachment 3). This includes the energy savings and GHG emissions reductions outlined in that ND. The Town’s action here, the CEQA “project,” is adoption of the standard 2019 Building Code, as modified to include the All-Electric Reach standards. Thus, the “project” includes the environmental benefits of the 2019 Energy Code set forth in the ND, and any additional environmental impacts of the All-Electric Reach portion of the code. To the extent the All-Electric Reach Code portion of the Town’s adoption of the 2019 Building Code does have environmental impacts, these impacts are more than offset by the environmental benefits of the rest of the Energy Code.

Attachments:

1. Ordinance
2. 2019 Cost-effectiveness Study for Low-Rise Residential New Construction prepared by Frontier Energy, Inc. and Misti Bruceri & Associated dated July 17, 2019 (“Study”)
3. California Energy Code (Title 24, Part 6) Initial Study and Negative Declaration
4. Correspondence from Rick Massell dated October 8, 2019
5. Correspondence from PG&E dated October 9, 2019
6. Correspondence received prior to September 18, 2019

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