



## Updated Natural Gas Infrastructure Prohibition Ordinance Questions and Answers

**1. What type of construction will the updated natural gas infrastructure prohibition ordinance cover?**

The updated ordinance prohibiting natural gas infrastructure (i.e. natural gas piping to heat water, space, food, etc.) will extend the existing ordinance from new detached accessory dwelling units, single-family, and low-rise multifamily buildings to all new construction with exemptions available for: retail food (cooking appliances only), hospitals, industrial, and manufacturing facilities.

**2. How is a Retail Food Facility identified?**

A Retail Food Facility eligible to have their cooking appliance(s) exempted under the updated ordinance are those defined and permitted by the Santa Clara County Department of Environmental Health. Retail Food Facilities are typically designated on planning documents submitted to the City as they must be designed well in advance of securing a building permit since they must include commercial grade equipment and specifications, such as at least one exhaust hood and replacement air to allow for this use. Please note that for those facilities receiving an exemption, the City's underlying reach code requirements for any mixed use spaces (see [Summary](#)), including requiring electrification-readiness, will still apply.

**3. How will the updated ordinance impact restaurant spaces located within a mixed-use building (e.g. residential multifamily dwelling units with ground floor retail, including restaurant space)?**

Restaurants meeting Santa Clara County's Retail Food Facility definition and located within a mixed-use building are eligible to apply for an exemption for its cooking appliances during the building permit approval process. Any approved exemptions would only apply to the designated restaurant space and, for this exempted space, the City's reach code requirements (see [Summary](#)) would still apply. The remainder of the building (not included within the restaurant space) would need to be all-electric and comply with the updated ordinance.

**4. What if the restaurant space was located on an upper floor (i.e. not ground floor) of a mixed-use building?**

The same exemption criteria would apply as described in #3 above.

**5. Since the California Energy Commission (CEC)'s Title 24 modeling software currently only allows Sanden single-pass systems to be modeled in order to meet compliance, will new construction projects be able to use larger more central systems as well as multi-pass systems to meet compliance in the future?**

Yes. The CEC currently has a version of compliance software for Nyle and Colmac and possibly AO Smith using a single-pass system. This updated version is undergoing testing and will be made available for the public to use by the end of 2020. Future versions of the software, expected by mid-2021, will allow for multi-pass systems to be modeled in the software. In the meantime, the City will consider alternate calculation methodologies that can be used to demonstrate compliance with the CEC's current energy modeling software.



**6. How would the updated ordinance apply to a core and shell development project that does not yet have tenants, but whose future tenants may be interested in installing a Retail Food Facility (such as a restaurant) in the future?**

The California Retail Food Code and Santa Clara County Department of Environmental Health mandate specific construction requirements, such as grease ducts, for Retail Food Facility/restaurant spaces. Since these requirements need to be included as part of the original plan submittal, a Retail Food Facility space would need to be designated as such in a core and shell development project when submitting for a building permit and the updated ordinance would apply to it unless an exemption for the cooking appliance in the eligible facility/space is requested.

**7. What will be the effective date of the updated natural gas infrastructure prohibition? For a project that's in the pipeline, when will those projects be expected to comply with the updated ordinance?**

City staff are planning to return to City Council in November 2020 and, if approved by Council, anticipate the updated ordinance effective date to be around August 2021. Projects would be expected to comply with the updated ordinance when applying for a building permit after the effective date.

**8. Should the City be requiring all-electric buildings given the potential for future power outages?**

Power outages, due to wildfires, public safety, or other reasons, are a legitimate concern, but will actually impact new natural gas and electric appliances similarly. The reason for this is that nearly all new gas equipment includes an electronic component to start and operate the equipment for both safety and efficiency. This means that during a power outage, neither gas nor electric equipment (if relatively new) will operate. Additionally, research shows that when gas or electric service is disrupted due to natural disasters (such as an earthquake or fire), the average time to service restoration for electricity has been much faster than for natural gas. There is also a resiliency argument in favor of electricity. If you have onsite solar PV and battery storage, you can island your building from the grid and operate a small amount of critical load.

**9. As electrification accelerates, what is being done to make sure communities aren't being adversely impacted by the rising natural gas rates, especially those who cannot afford to retrofit their homes to electricity?**

City staff are currently working on a building decarbonization roadmap, as part of the City's American Cities Climate Challenge grant, to identify areas and populations in San José that will be most adversely affected by the impacts of climate change, such as wildfires, increased flooding, and rising temperatures. The roadmap will allow us to prioritize our most vulnerable populations that will be most impacted by the effects of climate change. For example, we know which communities are facing a higher energy burden right now. The California Public Utilities Commission (CPUC) is also very aware of the need to transition away from natural gas in an equitable way and is actively working on this issue.

**10. Can you use heat pumps for space heating?**

Yes. There are several options available for space heating depending on the type of building, including:

- a. Mini Split Heat Pump – Single outdoor unit serving one apartment and connected to one or more indoor fan coil units (ducted or ductless).



- b. Variable Refrigerant Flow/Volume – Ductless systems that contain fewer outdoor units and can provide central heating and cooling. These are often large outdoor units usually located on the roof with manifold refrigerant piping to indoor units. These systems are extremely efficient and can achieve very high efficiencies by intelligently moving heat around a building.
- c. Ducted Heat Pump – Similar to ducted air conditioning system but simpler and can provide heating and cooling.
- d. Terminal Packaged Air Conditioning Systems – This system is commonly found in hotels and affordable housing. It can be loud, but it is easy to maintain and offered at a lower cost.

The above products are available from a variety of well-established American, Asian, and European manufacturers with local representation and distribution. There are many different options and a reputable mechanical engineer will know about all these heat pump space heating options.

**11. How do you size a heat pump water heater (HPWH)?**

A HPWH should be sized differently than a natural gas water heater. An optimal HPWH system will have storage tank(s) sized to meet the anticipated 2-3 hour peak load and heat pump recovery rate sized just large enough to recharge the storage slowly in between peaks, over many hours. This is the opposite of gas water heating, where tankless (no storage) with very high recovery rates is most efficient.

HPWHs can be individual or central systems. Individual systems can be located inside of a unit and they can discharge their cool air to the unit or be ducted to the outside. Larger central systems need access to outside air because they are generally extracting heat from the air and transferring it to the water. Project owners can consult a HPWH manufacturer to obtain sizing recommendations.

**12. Are there any good examples of using the rejected cool air from the heat pumps?**

Heat pumps expel cool air for air-source heat pumps and chilled water for water-source heat pumps. In an ideal scenario, this cold air or water would be captured and utilized. This works well in large commercial buildings with the engineering expertise to design these systems. There are products that generate hot water and chilled water for a whole building. These tend to more highly engineered systems and generally are not turn-key solutions.

**13. Can you discuss solar thermal versus solar photovoltaic (PV) on all-electric buildings?**

Solar thermal is commonly used with central natural gas heating. With central HPWHs, it is better to use all solar PV instead of solar thermal. This helps to simplify the building. If you have solar thermal and HPWH, you have to very thoughtfully connect those systems, and neither will operate at maximum efficiency. HPWH plus solar PV means a simpler building with fewer moving parts, and fewer different systems to maintain.

**14. With indoor space being limited, has the City seen successful use of varied or rooftop mounted storage tanks?**

Yes, HPWHs or storage tanks can be placed wherever space is available, including the roof. There are existing projects with all of their storage and HPWHs on the roof. Heat pump water heaters and storage tanks can also be located in separate locations, subject to manufacturer maximum distance requirements.