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To: Board of Supervisors

From: John Kopchik, Director, Conservation & Development Department

Date: January 18, 2022

Department Contra Costa County

Subject: HEARING to Consider Adopting Ordinance No. 2022-02 Pertaining to All-Electric Buildings

RECOMMENDATION(S):

1. OPEN the public hearing on Ordinance No. 2022-02, RECEIVE testimony, and CLOSE the public hearing.

2. ADOPT Ordinance No. 2022-02, adopting and amending the 2019 California Energy Code with changes, additions, and deletions, requiring that all newly constructed residential buildings, hotels, offices, and retail buildings be constructed as all-electric buildings without natural gas infrastructure.

3. ADOPT the attached findings and cost effectiveness studies in support of the County's changes, additions and deletions to the 2019 California Energy Code.

4. DIRECT the Department of Conservation and Development, to submit a certified copy of Ordinance No. 2022-02, and adopted findings and cost effectiveness studies and this Board Order to the California Energy Commission, the California Department of Housing and Community Development, and the California Building Standards Commission.

5. FIND that adoptions of the ordinance is exempt from the California Environmental

APPROVE	OTHER
RECOMMENDATION OF CNTY ADMINISTRATOR	RECOMMENDATION OF BOARD COMMITTEE
Action of Board On: 01/18/2022 APPROVED AS RECOMMENDED OTHER	
Clerks Notes:	
VOTE OF SUPERVISORS	
 AYE: John Gioia, District I Supervisor Diane Burgis, District III Supervisor Karen Mitchoff, District IV Supervisor Federal D. Glover, District V Supervisor NO: Candace Andersen, District II Supervisor 	I hereby certify that this is a true and correct copy of an action taken and entered on the minutes of the Board of Supervisors on the date shown. ATTESTED: January 18, 2022 Monica Nino, County Administrator and Clerk of the Board of Supervisors
Contact: Demian Hardman-Saldana, 925-655-2816	By: June McHuen, Deputy

Quality Act (CEQA) pursuant to CEQA Guidelines Sections 15061(b)(3) and 15308.

6. DIRECT staff to file a Notice of Exemption with the County Clerk and pay any required fee for the filing.

FISCAL IMPACT:

None.

BACKGROUND:

On August 3, 2021, the Board of Supervisors directed staff to develop an ordinance amending the County building code to require all newly constructed residential buildings, hotels, offices, and retail buildings to be constructed as all-electric buildings without natural gas infrastructure.

BACKGROUND: (CONT'D)

On December 14, 2021, the Board of Supervisors (BOS) introduced Ordinance No. 2022-02, waived its reading, and fixed a hearing date of January 18, 2022, to consider adopting and amending the 2019 California Energy Code to require that all newly constructed residential buildings, hotels, offices, and retail buildings be constructed as all-electric buildings without natural gas infrastructure.

Health and Safety Code sections 17958.5 and 18941.5 authorize a local agency to modify the 2019 California Energy Code and establish more restrictive building standards if the local agency finds that the changes and modifications are reasonably necessary because of local climatic, geological, topographical, or environmental conditions. California Public Resources Code section 25402.1(h)(2) further authorizes a local agency to modify the California Energy Code if the local agency finds that the proposed standards are cost-effective and the California Energy Commission (CEC) determines that the proposed standards will require the diminution of energy consumption levels permitted by the 2019 California Energy Code.

The proposed Ordinance No. 2022-02 would amend the 2019 California Energy Code due to local climatic, geographical, topographical, and environmental conditions. The attached findings describe the local conditions that make the more restrictive standards reasonably necessary. The attached findings also include the required findings related to energy savings and cost-effectiveness based on several cost-effectiveness studies prepared as part of the Statewide Reach Codes Program. The referenced cost-effectiveness studies are also attached. The proposed substantive changes to the 2019 California Energy Code are described below:

Modifications to the 2019 California Energy Code

Requires a newly constructed building that is any of the following building types to be an all-electric building:

-Residential (including single-family and multi-family buildings);

-Detached Accessory Dwelling Unit;

-Hotel;

-Office;

-Retail.

An all-electric building is defined to mean a building that has no natural gas or propane plumbing installed within the building, and that uses electricity as the sole source of energy for its space heating (including heating of all indoor and outdoor spaces of the building), water heating (including heating of indoor and outdoor pools and spas), cooking appliances, and clothes drying appliances. An all-electric building may utilize solar thermal pool heating.

The proposed ordinance would exempt development projects from the all-electric building requirement if the development project has obtained an approved vesting

tentative map, development agreement, or other vested right pursuant to applicable law, prior to the operative date of the ordinance. The exemption recognizes existing projects that have obtained vested rights based on entitlements issued before the all-electric building requirements become operative.

The proposed ordinance would not prohibit the use of emergency backup power sources, such as generators, that may be fossil-fuel operated. The ordinance would also not preclude anyone from installing natural gas for any existing buildings, including other allowed ancillary uses to existing buildings, such as pools, spas, or other similar outdoor equipment.

California Energy Commission

Modification to the California Energy Code, and the associated findings, must be submitted to the California Energy Commission (CEC) for review and approval before the modifications take effect. If adopted by the Board, staff will transmit the adopted ordinance and findings to the CEC. Staff is informed that the CEC review and approval process may take approximately 30-60 days.

Ordinance Effective and Operative Dates

If adopted by the Board, the ordinance will be effective upon approval by the California Energy Commission or 30 days after adoption, whichever is later. Staff recommends that the Board adopt the ordinance with an operative date of June 1, 2022, to provide the building industry and other stakeholders additional notice and lead time prior to enforcement of the new all-electric building requirements. That is, staff recommends that a building permit issued before June 1, 2022, for a newly constructed residential building, hotel, office, or retail building would not require the building to be an all-electric building. Additionally, a building permit issued after June 1, 2022 would not require a newly constructed residential building, hotel, office, or retail building to be all-electric if the building is part of a development project that has obtained an approved vesting tentative map, development agreement, or other vested right pursuant to applicable law, prior to June 1, 2022.

Outreach Efforts and Public Input

Public outreach related to development of this ordinance occurred through the Board of Supervisors Sustainability Committee. The Sustainability Commission also advised the Board to include building electrification commitments in the County's Climate Emergency Resolution adopted by the Board on September 22, 2020. The building electrification ordinance issue was first discussed at the Sustainability Committee meeting on September 23, 2019, and at subsequent meetings on February 3, 2020, and May 24, 2021. The Sustainability Committee recommended that the Board of Supervisors authorize staff to develop an ordinance amending the County building code to prohibit the use of natural gas and use electricity as the sole source of power for all newly constructed residential buildings, hotels, offices, and retail buildings. On August 3, 2021, the Board of Supervisors approved the Sustainability Committee recommendation and directed staff to prepare the proposed ordinance. The public has had the opportunity to provide input at each of these meetings. Most public comments have indicated overall support for a building electrification ordinance. At the direction of the Sustainability Committee, County staff also met with staff from the Building Industry Association (BIA) and East Bay Leadership Council (EBLC) to solicit feedback on the Committee's recommendation to the Board. The main concern raised by the BIA was to ensure that the building industry be given sufficient time to adapt to the building code changes so new projects in the pipeline would not require a redesign. The BIA also previously submitted a letter to the Board, which included, among other things, concerns of grid reliability, refuting whether all-electric homes are truly cost-effective, and a request that there not be localized codes. The BIA letter and the issues raised therein were discussed at the Board meeting on August 3, 2021.

On December 13, 2021, the California Pool and Spa Association (CPSA) submitted a letter to the BOS requesting an exemption from the proposed ordinance for swimming pools, spas, and other ancillary equipment for outdoor use, such as fire pits, fireplaces, decorative fire features, pizza ovens, barbecues, outdoor ranges, and outdoor space heating. The CPSA letter stated, among other things, that other alternatives that are not natural gas are either not practically available or severely disappointing in quality. Their major point being that a natural gas pool heating system can heat a pool or spa much faster to their optimal temperature, as compared to an electric heat pump system. The CPSA letter also states that the electric pool heating systems may be more costly for homeowners because of the potential need to increase the size of a building's electrical service when adding an electric pool heating system. The letter also raises the concern that eliminating or phasing out the use of natural gas would undermine the swimming pool and hot tub business and have an economic impact on the State. Other concerns raised include not being able to use natural gas for other outdoor features, such as fire pits, fireplaces, decorative fire features, pizza ovens, barbeques, outdoor ranges, and outdoor space heating. The letter received by the CPSA was discussed at the BOS meeting when the proposed ordinance was introduced on December 14, 2021.

Staff has reviewed the concerns raised by the CPSA. Electric and solar thermal alternatives to the appliances mentioned in the letter do exist and in fact electric heating is the most common approach for standalone hot tubs. However, as staff stated at the prior hearing, eliminating the use of natural gas would require other equipment that would take substantially longer than a gas system to heat cold water in a pool or inground spa. Regarding CPSA's argument that an electric pool heating system may increase cost to homeowners by requiring an increase in the size of the home's electrical service, this may apply when adding a pool with an electric heating system to an existing home if it requires the homeowner to upsize the electrical service for the home. However, the proposed ordinance only applies to pools installed for new homes. The added cost of designing the electrical system of a new home to accommodate the needs of a pool heating system is not significant as the added electrical load resulting from a pool heating system will not result in a substantial increase in the cost of the overall electrical system for the home.

A more comprehensive method for comparing the costs of various pool heating systems is to compare the life-cycle cost of these systems, which includes both the initial cost of installation and the ongoing operating cost of such systems over their useful life. Staff is not aware of any such studies that have examined this issue. The closest approximation staff has found is a cost effectiveness study done on behalf of the City of Santa Monica that found, generally, electric pool heating systems have a marginally higher initial cost of installation, but a marginally lower cost of ongoing operation. Overall, the analysis was inconclusive as to which type of system has a lower overall cost to homeowners.

On January 6, 2022, 350 Contra Costa submitted a letter with a comment wanting to ensure enforcement of the ordinance for the applicable commercial uses and requested that the last sentence in the definition of an all-electric building in the proposed ordinance be modified. The letter from 350 Contra Costa with their comments and suggested ordinance language changes are attached.

Clean Energy Policy and Electricity Reliability

The proposed ordinance would require all new residential buildings and many new commercial buildings within the County's jurisdictions to be constructed with electricity as the sole source of power. As such, it is important to consider whether the supply of electricity within the County is stable and reliable, and whether it will be adequate to serve the needs of all-electric buildings.

To address climate change, State policy is shifting away from fossil fuels as a source of power and towards greater use of renewable energy. As this transition proceeds, it raises questions as to whether there is enough electricity generated from renewable sources to meet the needs of Californians. In addition to the question of electricity supply, there is also the related question of whether the State's electrical grid infrastructure is adequate to distribute electricity to where it is needed across the State.

While County staff are not involved in managing the State's energy supply or grid infrastructure, staff has researched these areas and found that multiple State agencies are deeply involved in planning for the State's future energy needs. While County staff cannot assure these efforts will be successful, staff have confirmed that tremendous resources and attention are being applied at the State level to address these concerns.

Electricity procurement and management of the electrical grid are administered by utility companies and other energy providers, such as community choice energy programs. These processes are heavily regulated by State agencies, which are in turn guided by State law. County staff have examined these regulatory processes and concluded that State agencies have robust planning processes in place to forecast energy demand and to ensure that utilities procure sufficient electricity to meet the energy needs of Californians. This planning process includes a gradual transition to 100 percent renewable energy over the next 25 years. The planning efforts conducted by State agencies also include forecasting the infrastructure investments that will be needed to ensure the reliability of

the electricity grid.

State legislation enacted the 100 Percent Clean Energy Act of 2018, Senate Bill 100 (SB 100), which establishes a target for renewable and zero-carbon resources to supply 100 percent of retail sales and electricity procured to serve all State agencies by 2045. The bill also increases the State's Renewables Portfolio Standard (RPS) to 60 percent of retail sales by the end of 2030 and requires all State agencies to incorporate these targets into their relevant planning.

SB 100 calls upon the California Public Utilities Commission (CPUC), California Energy Commission (CEC), and California Air Resources Board (CARB) to use programs under existing statues to achieve this policy and issue a joint policy report to the Legislature by January 1, 2021, and every four years thereafter. The first joint policy report was released in March 2021 with the intent of being the first step in an iterative and ongoing effort to assess barriers and opportunities to implementing the 100 percent clean electricity policy.

To address system reliability of the grid, the joint agencies plan to evaluate resource portfolios that were developed as part of the joint policy report issued in March 2021. The first step outlined in the report specific to system reliability includes an evaluation of the resource portfolios in all hours of the year and to highlight potential supply shortfalls in meeting the projected energy demand. The second step included in their analysis will be to evaluate the revised resource portfolio with a set of probabilistic production cost model runs. This model will analyze reliability over a wide range of conditions to explore probabilistic variables, such as loads, renewable energy and hydro availability, and power plant outages to determine the likelihood of power outages due to insufficient capacity from the energy resource mix. The report further specifies that a loss of load probability that exceeds, or is significantly under, an acceptable limit will result in additional resource portfolio adjustments that would restart the process to the initial first step included in the analysis. The report states that this reliability analysis could be completed as part of the 2025 SB 100 Report or possibly through existing State efforts.

In addition to the requirements of SB 100, there is a very rigorous longstanding process for resource planning that involves multiple state agencies to forecast and procure enough renewable and carbon free electricity to meet the State's energy needs. This includes the California Independent System Operator (CAISO), CEC, and CPUC.

CAISO was created by the California Legislature and is responsible for managing the flow of electricity throughout the State. CAISO has an annual long-term Transmission Planning Process completed every 15 months that uses other tools to ensure the grid has adequate supply, or in rare cases a strategy for working through undersupply situations.

The CEC adopts an Integrated Energy Policy Report (IEPR) every two years that includes an assessment of major energy trends and issues facing California's electricity, natural gas, and transportation fuel sectors, including energy reliability. The IEPR provides policy recommendations on these issues. The CEC's 2019 IEPR included an analysis of building electrification and grid reliability. The CEC leads the State's research on all-electric buildings, in collaboration with the CAISO, CARB, and the CPUC. The 2019 IEPR identifies numerous reports produced over several years on the importance of adding firm electricity capacity and long duration energy storage.

The CPUC has a biennial process through the Integrated Resource Plan (IRP) Proceeding that requires load-serving entities (LSEs) such as MCE (the County's Community Choice Aggregator) and investor-owned utilities such as Pacific Gas and Electric (PG&E) to detail the procured and planned resources in their portfolio to ensure that the State has a safe, reliable, and cost-effective electricity supply. The CPUC's IRP Proceeding(s) also serve as the umbrella venue for considering comprehensive issues in the portion of the California electricity sector under the purview of the Commission (the CPUC does not regulate municipal utilities). The IRP proceeding was the successor to multiple long-term procurement planning (LTPP) proceedings, and continues to require investor-owned utilities (IOUs) such as PG&E and community choice aggregators such as MCE to submit procurement plans to project their resource needs for their bundled customers, and their action plans for meeting those needs over a ten-year horizon. This process requires PG&E and MCE to include contingency planning regarding resource planning and load forecasting, including a secured energy capacity equal to 115% of its expected peak load for each month of the year. As specified in MCE's 2022 Operation Integrated Resource Plan (OIRP), MCE must also demonstrate that it has procured capacity in specific transmission-constrained areas equal to its assigned share of CAISO's need for each month of the year In addition, MCE and PG&E is required to address short-term system reliability beyond the existing baseline resources required by the CPUC. Furthermore, PG&E and MCE are required to procure even more incremental capacity to meet mid-term reliability procurement requirements.

In September 2021, the CEC also released its Midterm Reliability Analysis report, which provides an analysis conducted by CEC staff to inform decisions about the future resource procurement to support energy reliability for calendar years 2023 – 2026. The report was prepared for the CPUC to consider as part of the IRP as the CPUC decides whether to adopt the next plan. The report finds that the ordered resource procurement for 2023 through 2026 appears to be sufficient, indicating system reliability. The report also concludes that the reliance on zero-emitting resources does not appear to diminish reliability compared to procuring thermal resources. The report acknowledges that the CEC demand forecast is being further enhanced to capture the frequency and dispersion of extreme climate impacts. Additionally, the study acknowledges that it did not include resource retirements beyond those assumed in the CPUC's mid-term reliability decision and that additional retirements would increase the likelihood of system reliability challenges.

Another issue of concern related to grid reliability is the occurrence of Public Safety Power Shutoff (PSPS) events. The State continues to work with utilities to reduce the need for PSPS events. However, such events will likely occur again in the future, subject to weather conditions. Property owners can mitigate their risk of losing power during PSPS events by installing a source of backup power, such as a generator or battery storage.

In summary, California's energy system is in the middle of a major transition away from fossil fuels and towards sources of renewable energy. This transition raises valid questions and concerns about the stability of electricity supply for County residents. While the proposed ordinance will not significantly change the overall demand for electricity within the State, requiring newly constructed buildings be all-electric will increase the dependency of these buildings – and their occupants – on the State's system for procuring and distributing electricity. Staff have researched this topic and concluded that multiple State agencies are engaged in a comprehensive planning process to implement this transition over the next 25 years. While the outcome of the process cannot be known at this time, considerable State resources are being applied to make it successful. This will be an ongoing challenge of statewide concern for decades to come.

MCE's Planning to Support Greater Building Electrification

Staff have also analyzed issues of electricity supply and stability at the local level. Most residents of the unincorporated area and most residents of nearly all of the cities within the County receive their electricity from MCE. MCE is California's first community choice energy provider and currently serves 36 local jurisdictions across the counties of Contra Costa, Marin, Napa and Solano. The County joined MCE in 2017 with the goal of increasing the amount of energy provided within the County that comes from renewable sources. MCE was established over 10 years ago and has been able to consistently procure electricity from renewable sources to a degree that exceeds State policy requirements while maintaining stable prices for consumers relative to other Bay Area utilities and energy providers. MCE is also taking steps locally to address conditions that impact grid reliability.

On December 22, 2021, MCE submitted a letter that summarizes its 2022 Operational Integrated Resource Plan (OIRP). The OIRP included, among other things, electrification trends, grid reliability needs, and capacity requirements. MCE's OIRP also stated that MCE met the State's 60% renewables goal back in 2017 and is expected to reach 85% renewable energy by 2029. Additionally, to mitigate the impact of electricity outages, PSPS events, and improve grid reliability MCE allocated \$6 million in 2019 for a resiliency fund that prioritizes customers and populations that are disproportionately affected by grid outages.

MCE's letter also outlines ten key procurement process activities which incorporate factors such as electrification trends and load forecasts. The referenced letter from MCE is attached with web links to MCE's 2022 OIRP and the State's IEPR.

In conclusion, staff does not perceive any near-term threats to the ability of County residents to obtain electricity from local energy providers. The State faces longer term challenges as it attempts to manage the transition to 100 percent renewable electricity by 2045. More investment in renewable energy generation and distribution infrastructure

will be needed. The proposed ordinance will have negligible impact on this process. All County residents will be dependent on State agencies to successfully navigate this transition and ensure a stable energy system for California, but this dependency will be particularly acute for those who occupy all-electric buildings.

In addition to efforts by State agencies, the County's local electricity provider, MCE supports building electrification and is taking steps to improve energy reliability. County residents and building owners can mitigate energy reliability risk by installing battery storage or other sources of back-up electrical power.

California Environmental Quality Act (CEQA)

For the purposes of compliance with CEQA, adoption of the ordinance is the project. Based on the record before the County, staff has determined that this project is categorically exempt from environmental review under CEQA Guidelines Sections 15061(b)(3) and 15308 (Actions by Regulatory Agencies for Protection of the Environment). Section 15308 covers Class 8 categorical exemptions, which consist of actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment. For the purpose of protecting the environment, the proposed ordinance eliminates the construction of natural gas infrastructure for all newly constructed residential buildings, hotels, offices. The regulatory standards contained in the proposed ordinance are more stringent than those set forth in the State Building Standards Code, and as a result there are no reasonably foreseeable adverse impacts or possibility that the activity in question may have a significant effect on the environment.

CONSEQUENCE OF NEGATIVE ACTION:

If the proposed ordinance is not approved, the County would not implement one of the actions specified in its Climate Emergency Resolution adopted by the Board of Supervisors on September 22, 2020.

CLERK'S ADDENDUM

Speakers: Doug Chan, Builders; Rob, Danville; Denise, 1000 Grandmothers for Future Generations; Lisa Jackson, 350 Contra Costa; Juan Pablo Galvàn, Save Mt. Diablo; Carol, Rossmoor Community; Floy Andrews; Fred; No name given, Vote for Change; Mariella, Community Development Director, MCE; Jackie Garcia Mann, Climate Reality and Interfaith Climate Action Network; Ryan, Sustainable Contra Costa; Melissa Yu, Sierra Club; Casimir Karbo.

The following people provided written commentary (attached): Gary Farber, 350 Contra Costa; Adrian Byram, Sustainable Rossmoor; Andy Ferguson; Sue Bock, San Ramon Valley Climate coalition; Zoe Siegel, Greenbelt Alliance; Lisa Chang, Alamo; Ryan Buckley, Sustainable Contra Costa; Sheila Tarbet, Elders Climate Action; Laura Feinstein, PhD; Amanda Millstein, MD; Jan Warren, Interfaith Climate Action Network of CCC; Marcia Liberson, Walnut Creek; Cynthia Mahoney, Contra Costa Citizens Climate Lobby; Denice A. Dennis, 1000 Grandmothers for Future Generations; Ogie Strogatz, 350 Contra Costa; Marti Roach, 350 Contra Costa; Karen Leung, Contra Costa; Brenden Millstein; Maria Gastelumendi, Environmental Task Force of City of Lafayette; Nancy Hu, Climate Reality Project, Environmental Task Force of Lafayette.

ATTACHMENTS

Ordinance No. 2022-02 Findings Energy Reach Code Adoption Cost Effectiveness Studies MCE Letter 350 Contra Costa Letter