

350 Humboldt | Climate 911| Coalition for Responsible Transportation Priorities
Environmental Protection Information Center | Humboldt Coalition for Clean Energy
Humboldt Waterkeeper | Northcoast Environmental Center
Redwood Coalition for Climate & Environmental Responsibility

Sent via email on date down below

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RE: Draft Climate Action Plan and CEQA Scoping Comments

I. Introduction

Thank you for this opportunity to provide comment on the draft Humboldt County Climate Action Plan. Please accept these comments from 350 Humboldt, the Coalition for Responsible Transportation Priorities, the Environmental Protection Information Center, Humboldt Waterkeeper, the Northcoast Environmental Center, and the Redwood Coalition for Climate and Environmental Responsibility on both the draft Regional Climate Action Plan and as scoping comments for the forthcoming Environmental Impact Report.

As organizations whose missions include the preservation and protection of our environment, we believe that quick, coordinated action to reduce our greenhouse gas emissions locally is imperative to combat the effects of climate change and that local governments have a responsibility to adopt and implement policies to ensure this action. Although we support most of the concrete actions described in the draft CAP, we feel there are ways in which it can be strengthened not only with more concrete actions, but also with a strong implementation plan which includes dedicated staffing. Our organizations further stress that taking action to address our climate crisis need not wait for the Climate Action Plan to be finalized.

II. In Order For A Qualified Climate Action Plan to Work, Progress Must Be Verifiable

We applaud the County for undertaking the work of creating a qualified Climate Action Plan. It is essential that actions to address climate change be meaningful and measurable. Otherwise, jurisdictions run the risk of greenwashing and lawsuits. The county is relying on a qualified CAP to mitigate “significant and unavoidable” greenhouse gas emissions stemming from its 2017 General Plan Update. OPR defines acceptable mitigation measures as “fully enforceable”, “capable of being accomplished successfully within a reasonable period of time”, ...and capable of achieving the GHG target with “a high level of confidence.” CAP measures that are not mandatory must have “substantial evidence of effectiveness.”¹

To that end, we believe that the RCAP must be more explicit, with measurable outcomes, and more accountable to the public. The plan currently calls for the Climate Program Manager to develop an “annual progress report.”² Given that there are only 5 years until 2030, and it has taken 7 years just to get to this draft, we can’t afford to waste whole years at a time if implementation is not going well and a course correction is needed. There should be a timeline on each jurisdiction’s website, updated quarterly, displaying progress toward a due date for each measure.

Another opportunity for accountability comes from the Regional Climate Committee. The committee should meet regularly and publicly so that progress on the Climate Action Plan can be tracked by the public.

III. The Regional Climate Committee Must Be Effective and Accountable

The Regional Climate Committee is central to the function of the RCAP. The term appears over 300 times throughout the document and the Committee is charged with a variety of tasks, from “develop[ing] and provid[ing] models, pilot programs, and template policies or ordinances”³ to “identify[ing] locations throughout the county that are priority for utility-scale, nano-grid, and micro-grid solar, hydropower, and/or wind energy generation”⁴ to “[d]evelop[ing]” and administer[ing]” a “home energy advisory service.”⁵

Yet, the RCAP contains very little specific instruction on the construction and staffing of the Regional Climate Committee. We believe that the Regional Climate Committee needs to be: (1)

¹ OPR General Plan Guidelines, Climate Change https://www.opr.ca.gov/docs/OPR_C8_final.pdf OPR CEQA and Climate Change Advisory 2018 https://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf

² C-1a page 30

³ Page 30.

⁴ Page 35.

⁵ Page 38

adequately staffed; (2) meaningfully integrated into important decisionmaking; (3) politically accountable.

We believe that these goals are best achieved through housing the Regional Climate Committee under the Humboldt County Association of Governments (HCAOG). Not only is HCAOG already tasked with multiple-jurisdictional coordination, it is also the lead in regional transportation planning, one of the prime subjects of concern in this CAP. As members of HCAOG are elected representatives from jurisdictions subject to the CAP, incorporation of the Regional Climate Committee under HCAOG also ensures that decisions made by the Committee are politically accountable.

IV. Key Ingredients for Success

The California Association of Environmental Professionals Climate Change Committee produced a white paper titled Best Practices in Implementing Climate Action Plans after reviewing the implementation, and lack thereof, of a number of local CAPs.⁶ They found that reliance on existing staff, lack of funding, and lack of political support were the most common reasons for failure. By those criteria, with the current draft, the prospects of successful implementation are not good.

A. Staffing

Staffing appears insufficient to meet all of the obligations created by the RCAP. The RCAP anticipates that a significant portion of the work will be grant funded. The RCAP currently envisions one FTE – the Climate Program Manager – who will implement the RCAP in coordination with staff from the County and Cities.⁷ Of course, as the RCAP itself acknowledges, these jurisdictions are understaffed and climate focused policies are often an afterthought.⁸ For example, this document itself is several years delayed.

Therefore, we strongly recommend that the RCAP envision more than one FTE focused on RCAP implementation. A Climate Program Manager to act as a coordinator is a good start. We recommend the recruitment of at least two additional FTEs to help implement these policies. If the Regional Climate Committee is integrated with HCAOG, as we recommend, not only would there need to be at least three FTE added but the joint organization would need to look at how

⁶ AEP Climate Change Committee White Paper Best Practices in Implementing Climate Action Plans. 2018. https://www.califaep.org/climate_change.php

⁷ C-1a page 30

⁸ Page 7

to use the same staff to provide similar functions for both agencies. Sonoma County, for example, has a Data Analyst position that serves both their regional climate and transportation organizations.

B. Funding

It takes money to get money. Matching funds are one of the biggest barriers for local jurisdictions to access government grants. A ballpark ratio of funded to submitted grant applications is somewhere between 1 in 3 and 1 in 10, so the 3-5 grants per year in the current draft are insufficient. It takes staff to write grants, and, even in this time of budget shortfalls, successful CAP implementation depends on jurisdictions' willingness to "prime the pump" and hire them. The RCAP correctly notes that Humboldt has the opportunity to seek grants for more rural communities that may not be available to competitors. We should take advantage of our unique position to receive as much funding as possible.

C. Public and Political Support

Community support is essential for approval and implementation of this CAP. Without a broad base of support, a few vocal naysayers can sway public officials and stall climate progress. For the public to support the CAP, they have to understand what is being committed to, by whom, and by when, and have a way to monitor progress. The draft in its current state does not provide this. We strongly suggest a thousand foot view with clear quantitative targets.

V. Additional Information on the Use of CEQA Streamlining Must Be Provided

The draft document describes "CEQA GHG Emissions Analysis Streamlining" for future projects and plans that are consistent with the RCAP (i.e., tiering) as one of the purposes of the RCAP.⁹ The draft specifies that demonstrating consistency with the RCAP for CEQA purposes will be accomplished with a "GHG Emissions Analysis Compliance Checklist," and that future projects that are not consistent with the RCAP "must complete a different assessment utilizing quantitative thresholds of significance."¹⁰ The Notice of Preparation for the RCAP Environmental Impact Report (EIR) specifically includes the establishment of these quantitative thresholds as part of the RCAP project.

However, the current draft document contains neither a Compliance Checklist, nor a description of what types of projects the Checklist might apply to, nor a set of quantitative GHG emissions significance thresholds. Without these critical pieces of information, it is impossible to fully

⁹ Page 4

¹⁰ Page 79

assess the impacts of the RCAP. It is especially critical to understand the way compliance will be assessed via the Checklist, since the draft RCAP relies on many vague and/or uncertain measures and actions (e.g., conducting feasibility studies) which do not always have a clear application to individual future projects.

Compliance checklists are commonly included in city and county Climate Action Plans, generally as an Appendix. San Diego County, LA County, Pasadena, San Luis Obispo, San Mateo and San Jose all include Compliance Checklists in the draft CAPs they provided for public review.

VI. Urbanized Parts of the County Should Be Characterized as “Urban” Rather Than Rural

The current draft distinguishes between “rural” and “urban” areas of the county and then proposes different measures for each of these areas.¹¹ The justification for this distinction is that it is more difficult for rural areas of the county to reduce GHG emissions. However, as currently defined, many urbanized areas of the county are categorized as rural. This is because the current definition of “rural” is written far too broadly by including “the unincorporated County as well as some incorporated cities that have similar constraints.”¹²

While they are not incorporated, areas of the county such as McKinleyville, Cutten, and Myrtle town are hardly “rural.” McKinleyville has the third largest population of any community in Humboldt. Many of the people who live in these areas are served by municipal water and sewer systems and commute to the nearby cities of Eureka and Arcata for work. These areas are effectively urbanized and should not be treated the same as truly remote areas of the county. Reducing VMT from these areas is essential to reducing the County’s overall VMT, as much of the county’s VMT is generated by these kinds of suburban commuter communities. Instead of giving these areas a pass by categorizing them as rural, we should be specifically targeting them for increased transit access, bike mobility, etc., in order to reduce VMT. Additionally, measures to reduce building emissions in these areas are essentially the same as measures in larger incorporated communities, whereas “rural” measures pertaining to off-grid propane or diesel have little applicability.

¹¹ Page 25

¹² Page 25

We therefore propose that the CAP adopt the 2020 Census Urban Area boundaries to define urban communities.¹³ By doing so, the communities of McKinleyville, Cutten, Myrtle town, Humboldt Hill, Ridgewood, and others would be classified as urban for purposes of the RCAP.

VII. The RCAP Cannot Take Credit For Reduction Measures Already Mandated by Law

Measure SW-1 is focused on meeting the requirements of SB 1383. We absolutely believe that Humboldt should follow State Law and reduce waste sent to landfills. However, we do not believe it is appropriate to attribute emissions reductions resulting from state mandates to the RCAP when they should be in the adjusted BAU forecast. Waste characterization studies provide organic waste yardage by jurisdiction, so it is not difficult to subtract out contributions from the few small towns with Low Population Waivers. Collection and edible food diversion ordinances have been passed in the rest of the county, and HWMA is in the process of setting up an organics processing facility.

SB 1383 doesn't require the county to develop its own compost facility. If construction of a compost facility is a CAP measure, then the only emissions reductions that can be counted are from decreased trucking to out of county composting facilities. 29,689 MT CO₂e looks more like all the methane emissions avoided by diverting the county's organic waste from landfills, which properly belongs to state action.¹⁴

State guidance on what kinds of emissions reductions count for a qualified climate action plan, aligns with this approach, specifically stating:

Reductions measured towards a reduction target should not include the benefits of State programs already in force; rather these reductions should be reflected in the forecast. Regardless of the role State programs play in local emissions reductions, the focus of local CAPs should be on measures to reduce emissions beyond what the State programs will achieve.¹⁵

Even when CARB modeling is not available, it is preferable to adjust the forecast with best estimates than to credit GHG reductions from massively influential state programs to local jurisdictions. SB 1383 and other mandated emission reductions—including reductions from the

¹³ Available at

<https://cacensus.maps.arcgis.com/apps/webappviewer/index.html?id=67f7e4aa0bc6450e8a052176a12d86b9>

¹⁴ Page 70

¹⁵ https://opr.ca.gov/docs/OPR_C8_final.pdf at 228

Advanced Clean Trucks, Advanced Clean Fleets, Advanced Clean Cars II, Title 24, and Federal CAFE Standards—should be moved to the adjusted BAU and new, non-state mandated measures added to make up for the gap.

VIII. Treatment of Point Sources

Humboldt only has two point sources required to report greenhouse gas emissions, the gas powered Humboldt Bay Generating Station and Humboldt Sawmill Company's biomass plant. Both are regulated under the Clean Air Act. The California Supplement to the National Community Protocol recommends excluding greenhouse gas emissions from power plants and industrial facilities regulated by the Clean Air Act, along with their electricity use and fuel consumption.¹⁶ Electricity and fuel consumption from the power plants and former pulp mills, also regulated by the Clean Air Act, were included in the inventory without any clear explanation of how local governments could exercise authority.

Historically, Humboldt's sawmills and pulp mills burned their wood waste to provide their own heat and power. They produced far more electricity than they needed and exported the rest to the grid. Humboldt Sawmill Company still generates its own electricity from biomass instead of using grid power. The CO₂ emissions from its electricity consumption would not be included in the RCAP inventory's Energy sector since the IPCC classifies CO₂ emissions from biomass plants as "Agriculture, Forestry and Other Land Use," and then only as information. Methane and nitrous oxide emissions from biomass energy are included in the Energy sector.¹⁷

HBGS is a large gas consumer but its emissions from gas consumption and power generation are one and the same. Fossil gas and electricity consumption in Humboldt dropped significantly between 1990 and 2010 as sawmills and the pulp mill shut down.¹⁸ Excluding HSC and HBSC's energy consumption from the back cast 1990 inventory in line with the recommendations of the CA Supplement to the US Community Wide GHG Emissions Protocol would make a significant difference in the amount of GHG reduction the RCAP must achieve. Excluding both emissions and energy use of Major Sources under the Clean Air act would not preclude measures to decrease energy consumption or emissions by other industries whose emissions are not federally regulated and which could, in the case of aquaculture and data centers, have a significant impact on the region's ability to meet its energy goals.

¹⁶ AEP, CA Supplement to the US Community Wide GHG Emissions Protocol
https://califaep.org/docs/California_Supplement_to_the_National_Protocol.pdf

¹⁷ 2019 Refinement of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2.
https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/2_Volume2/19R_V2_2_Ch02_Stationary_Combustion.pdf

¹⁸ CEC, California Energy Consumption Database <https://ecdms.energy.ca.gov/>

IX. VMT Reduction Measures and Targets Are Insufficient and Inconsistent with Other Plans and Policies

A. VMT Reduction Targets Are Inconsistent with CEQA Significance Threshold

The Governor's Office of Planning and Research (OPR) recommends a CEQA significance threshold for vehicle miles traveled (VMT) of 15% below existing VMT per capita for most development projects.¹⁹ The draft RCAP acknowledges this recommendation and notes that the county has recently adopted the same threshold of significance for evaluating the transportation impacts of its own projects.²⁰ Yet the only quantified VMT reduction measures included in the draft RCAP, TR-1 and TR-2, cumulatively fall far short of this mark. For the target year of 2030, TR-1 Urban and TR-1 Rural each equate to a 0.2% reduction in VMT,²¹ while TR-2 Urban and TR-2 Rural each equate to a 3% reduction.²² Assuming the population is roughly stable over the next 5 years, the RCAP measures collectively equate to a 3.2% reduction in per capita VMT, which is 11.8% short of the CEQA significance threshold. (Note that part of the problem may be faulty assumptions, such as the assumption that even rural transit trips only average 3.8 miles,²³ despite many of the common transit trips in the region being much longer, and the assumption that only biking and not walking rates can be significantly increased,²⁴ despite walking being already much more common than biking.)

Although the RCAP is not explicitly a residential or office project subject to the 15% VMT reduction threshold, it is meant to streamline CEQA approval of such projects. If the VMT analysis of subsequent plans and projects is subjected to such streamlining, it will result in violations of the county's own adopted significant threshold for VMT, which is unacceptable. Furthermore, missing the 15% VMT reduction threshold means that the RCAP itself should be considered to have a significant VMT impact, requiring additional mitigation. This is illogical and counterproductive.

Furthermore, the proposed reductions to regional VMT are so small that they are likely within the margin of error of any tool that could be used to estimate VMT in the region. The VMT reductions are therefore not only inadequate, they are also unmeasurable and therefore unenforceable, which undermines the RCAP's status as a "qualified" Climate Action Plan.

¹⁹ Governor's Office of Planning and Research. December 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA.

²⁰ Page 42

²¹ Appendix C, Pages 46, 50

²² Appendix C, Pages 54, 60

²³ Appendix C, Page 56

²⁴ Appendix C, Table 21

The draft RCAP describes its measures multiple times as “conservative” relative to the 15% reduction threshold, but that is not true. The measures fail to ensure that the RCAP’s VMT impacts are less than significant, and are therefore the opposite of “conservative.” To comply with CEQA and ensure a “qualified” RCAP, measures must be added and strengthened to ensure at least 15% reductions in per capita VMT.

B. VMT Reduction & Mode Share Targets Are Inconsistent with Regional Transportation Plan Targets

Humboldt County’s adopted Regional Transportation Plan (RTP) calls for even greater VMT reductions than the CEQA threshold. Specifically, the RTP calls for a 25% per capita by 2030.²⁵ Clearly, the draft RCAP does not come anywhere near complying with this target either.

The RTP further calls for increasing the combined active transportation and transit mode share to 30% by 2030.²⁶ In contrast, the draft RCAP calls for achieving an active transportation mode share of 8%²⁷ and a transit mode share of 13%,²⁸ for a collective active and transit mode share of 21%, well short of the RTP’s target. Since mode share is closely tied to VMT, this lack of consistency is also deeply troubling.

The draft RCAP cites the RTP’s VMT and mode share targets many times, and describes the RCAP measures as “consistent with” or “aligning with” these targets, but that is not accurate. The draft RCAP simply calls for much less VMT reduction, and much less mode shift, than does the adopted RTP. To ensure consistency across regional planning documents, to support RTP implementation, and to avoid significant CEQA impacts caused by a conflict with another adopted local plan, the RCAP should add and strengthen measures in order to achieve the VMT and mode share targets found in the RTP.

C. VMT Reduction Measures Are Not Sufficient to Achieve Targets

The measures included in the draft RCAP to increase active transportation and transit mode share and reduce VMT are not sufficient to achieve even the extremely limited targets currently included in the draft document.

²⁵ Humboldt County Association of Governments. Regional Transportation Plan: Variety in Rural Option of Mobility (VROOM): 2022-2042: Page 2-13.

²⁶ Ibid.

²⁷ Pages 45, 49

²⁸ Pages 53, 58

The main barriers to implementing active transportation infrastructure are funding, staffing shortages, and lengthy and ineffective public processes. These obstacles combine to both dramatically reduce the number of projects built and increase the timeline for completion. Yet for funding, the RCAP suggests merely applying for 3 grants each year,²⁹ and continuing to seek funding from other competitive external sources - measures already regularly met and exceeded by local agencies. And the RCAP is silent on staffing and public process. To ensure adequate active transportation infrastructure is built in a timely manner that could conceivably allow the targets to be met, additional measures must be added to the RCAP. These measures must include, at a minimum:

- Development of additional, substantial sources of local funding for active transportation, or a commitment to devote a significantly greater share of street and road funds to bike and pedestrian infrastructure.
- Universal adoption and implementation of enforceable complete streets policies, which require complete streets features to be automatically included in routine road maintenance and repair projects, and any other project that affects the right-of-way, including when such features require portions of the right-of-way to be reallocated away from vehicle travel or parking.
- Development of a regional quick-build program for bike and pedestrian infrastructure, without which there is no way that necessary bike and pedestrian networks will be completed by 2030.

Furthermore, behavioral research suggests that transportation mode shift is most effectively encouraged by a combination of incentives and disincentives.³⁰ Specifically, parking supply has been shown to be a critical factor in mode choice, more significant even than walkability or transit access.³¹ Therefore, in order to achieve meaningful mode shift, the RCAP must include measures to either limit or price the parking supply in urban areas. Parking management measures also must be explicitly incorporated into employer Transportation Demand Management (TDM) Plans (see proposed Measure TR-5).

The proposed RCAP transit measures, TR-2 Urban and Rural, include headway targets and other measures that have a more defensible relationship to desired mode share. However, funding is again the main obstacle to reducing transit headways and making other transit improvements, and the RCAP is silent on transit funding, other than suggesting a “collaboration”

²⁹ Page 47

³⁰ Piatkowski, Marshall and Krizek. 2017. Carrots vs. sticks: Assessing intervention effectiveness and implementation challenges for active transport. *Journal of Planning Education and Research*: 1-15.

³¹ Millard-Ball and West. 2020. Residential parking supply has a stronger influence on household travel choices relative to a neighborhood’s walkability and access to transit. UC Institute of Transportation Studies Policy Brief.

to apply for grant funding.³² The Humboldt Transit Authority (HTA) and Humboldt County Association of Governments (HCAOG) are already extremely effective at winning competitive grants, but this is not a sufficient nor sufficiently reliable funding strategy for long-term headway reductions and other necessary improvements.

Indeed, the text of the RCAP points to other cities that have increased transit mode share, and identifies successful strategies including taxes to support transit, user taxes, reduced parking availability, and transit-only lanes. The RCAP says that “it is anticipated” that the county’s urban areas will follow suit with similar policies, but inexplicably does not include any of them in the list of actions to implement the measure.³³ In order to ensure sufficient funding, and to align incentives to produce ridership growth, all of these “key strategies” must be explicitly listed as implementation actions in the plan.

D. Potential VMT Reductions from Land Use Changes are Vague and Underutilized

Measure TR-3 emphasizes the importance of land use decisions, yet lacks clear language or actions that promote infill. This measure only explicitly aims to increase mixed use within infill areas, rather than increasing infill itself. It delegates the development of templates and educational materials, working with existing agencies on their plans, and pursuit of funding to the Regional Climate Committee, but stops short of committing jurisdictions to change their zoning. We are concerned that this lack of clarity about the planned result will allow streamlining of residential projects that contribute to sprawl. The current wording would allow those projects to say: “We’re not building in an infill priority area, so increasing mixed use doesn’t apply to us.”

Even though this measure doesn’t claim quantitative greenhouse gas reductions, it is critical to mitigating significant and unavoidable increases in VMT caused by Humboldt County’s 2017 General Plan. The county’s participation in this RCAP is required by CEQA because quantifying and mitigating the increased GHG emissions from the General Plan update was deferred to this Regional Climate Action Plan.³⁴

E. Potential Measures that Promote Infill Development and Decrease VMT.

³² Tables 15 and 16

³³ Appendix C Page 54

³⁴ Humboldt County GPU, Revised EIR Chapter 3.13 Climate Change and Greenhouse Gas Emissions, 2017.

<https://humboldt.gov/DocumentCenter/View/58842/Section-313-Climate-Change-and-Greenhouse-Gas-Emissions-Revised-DEIR-PDF> 2017.

The following measures, which have been instituted by other California cities and counties, have potential to lower transportation greenhouse gas emissions within designated zones by up to 65%.³⁵

- Establish infill and transit-oriented development (TOD) overlay zones with minimum density requirements for as-of-right ministerial approval, streamlined permitting and reduced fees. CAPCOA indicates that GHG reduction in these zones could be as high as 31%.
- Pass ordinances prohibiting redesignation and rezoning of land for lower intensity land uses in transit-oriented development areas (areas within walking distance of basic services and transit).
- Charge a transportation impact fee for projects located more than a half mile from transit that lack bike/pedestrian infrastructure to create a fund used for improving transit and complete streets.
- Have planning departments audit zoning codes for consistency with compact walkable development and require changes.
- Further streamline permitting and reduce fees for construction of ADUs and affordable housing in targeted areas.
- Increasing the cost and limiting the supply of parking decreases urban car ownership and driving mode share while creating the opportunity for construction of additional housing.³⁶ This can be done on-street with metered parking with dynamic pricing and time limits, which can decrease transportation GHG emissions by 30%, or by reallocating street space from parking to bike lanes.³⁷ Off-street parking can be limited or made more expensive by eliminating parking minimums, unbundling parking from rent, charging for workplace parking, and decreasing transit headways to less than 15 minutes, triggering a state law that forbids parking minimums within a half mile of transit stops.

X. Quantitative Measures that Don't Meet CEQA Criteria

³⁵ CAPCOA, Handbook for Analysing Greenhouse Gas Emissions Reductions 2021
https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf

³⁶ Spears, S. Impacts of Parking Pricing Based on a Review of the Empirical Literature Policy Brief.
https://ww2.arb.ca.gov/sites/default/files/2020-06/Impacts_of_Parking_Pricing_Based_on_a_Review_of_the_Empirical_Literature_Technical_Background_Document_0.pdf

³⁷ CAPCOA, Handbook for Analyzing Greenhouse Gas Emissions Reductions 2021
https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf

Quantitative measures in a qualified CAP must be enforceable or accompanied by significant evidence of effectiveness, must be additive and not mandated by pre existing law and ordinances, and must be feasible to accomplish within a reasonable amount of time.³⁸

A. Measure TR-6, Increasing EV Adoption and Charging

Action TR-6b commits the Regional Climate Committee to draft a template for an ordinance to streamline EV infrastructure “to be distributed to applicable jurisdictions” but falls short of committing jurisdictions to pass it. Furthermore, AB 1236 already requires every city and county to adopt ordinances that expedite and streamline the EVCS permitting process.

Action TR-6c commits the Regional Climate Committee to “working with local jurisdictions to modify the Municipal code to promote EV charger access in new developments, redevelopment and existing parking spaces. This may include [*a list of possible code changes*].” Listing a possible menu falls short of committing local jurisdictions to make specific code changes, and the lack of specificity makes it impossible to quantitatively predict or verify the result. A specific list of code changes that all jurisdictions “shall” adopt would turn this into a qualified CAP measure.

TR-6 conflates the number of charging stations “needed to support” a given number of EVs with the number of charging stations needed to induce the purchase of the same number of EVs and attributes 100% of the GHG reduction from the newly adopted EV miles to the installation of charging infrastructure. No supporting evidence is provided. CAPCOA’s Handbook for Analyzing Greenhouse Gas Emission Reductions caps the GHG reduction from chargers required by reach codes at 11.9% of GHG emissions from vehicles accessing the charger location, counting only gasoline miles replaced by electric miles in PHEVs.³⁹ Other California CAPs have followed this convention. One could reasonably also attribute some GHG reductions to workplace L2 and public DC chargers which shift load from predominantly gas-fired evening home charging to midday solar charging, but attributing all new EV miles to added charging goes too far.

Ordinances to expedite and streamline siting and permitting are mandated by AB 1236.⁴⁰ While including them in the CAP may finally get jurisdictions to comply, this should be a supportive, not quantitative measure.

³⁸ OPR, General Plan Guidelines, Chapter 8. Climate Change

³⁹ CAPCOA, Handbook for Analyzing Greenhouse Gas Emissions Reductions 2021
https://www.airquality.org/ClimateChange/Documents/Final%20Handbook_AB434.pdf

⁴⁰ CalBO. AB 1236 Toolkit for Small Jurisdictions 2015
<https://www.calbo.org/sites/main/files/file-attachments/ab1236toolkitsmalljurisdiction.pdf?1524861090>

Expansion of public charging over the next 6 years from these CAP measures is not likely to produce a 55,000 MT drop in transportation emissions. The target should be scaled down and the GHG emissions reduction decreased accordingly.

B. Other Measures with Potential to Increase EV Adoption

The draft CAP projected future charging needs in 2030 and 2045 using EVI-Pro Lite, but a newer California analysis projects a higher percentage of workplace, multifamily, and fast charging will be needed.⁴¹ Workplaces and multifamily housing are locations where vehicles park long enough at an L2 charger to fully charge, so installation in these locations should have the greatest impact on EV adoption and on increasing PHEV electric miles. It is unlikely that private landowners will voluntarily add charging beyond what is required by Title 24. Humboldt could follow other CA jurisdictions and adopt reach codes to increase the percentage of office, industrial and multifamily off street parking in new and substantially remodeled buildings that is “charger ready” (has a 220 outlet for each stall) and the percentage of L2 chargers actually installed.⁴² Employers with over 25 employees and off street parking could also be required to provide charging and preferred parking places for zero emission vehicles.

C. Measure TR-8, Off Road Renewable Diesel

While it makes sense to take actions to speed the retirement of existing small off-road gas engines, the major GHG reductions claimed in this measure are for enforcing Title 13 [Section 2449.1\(f\)\(2\)](#) of the CA Code of Regulations requiring the use of renewable diesel. This fails CEQA criteria because it relies on a state law. It also isn’t applicable because Humboldt County is on the list of “captive attainment areas” for the off road diesel rule, which means that off-road diesel equipment owners are exempt from the requirement to use renewable diesel if they operate exclusively within Humboldt and the following counties: Alpine, Colusa, Del Norte, Glenn, Lake, Lassen, Mendocino, Modoc, Monterey, Plumas, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz, Shasta, Sierra, Siskiyou, Trinity, Tehama, Yuba, and the portion of Sonoma County that lies within the boundaries of the North Coast Air Basin.⁴³ The 42,580 MT CO₂e of the GHG reduction claimed for off road renewable diesel should be removed from the plan.

D. Measure BE-1, Building Energy

⁴¹ CEC, Assembly Bill 2127 Second Electric Vehicle Charging Infrastructure Assessment Commission Report 2024

⁴² CA Energy Codes and Standards. Reach Code Paths: Electric vehicle requirements <https://localenergycodes.com/content/reach-codes/electric-ready>

⁴³ CARB Fact Sheet Renewable Diesel Fuel Requirements <https://ww2.arb.ca.gov/resources/fact-sheets/fact-sheet-renewable-diesel-fuel-requirements> 2022

SB 1020 requires 90% renewable electricity by 2035 and 95% by 2040. This should be reflected in the Adjusted BAU forecast for 2045. Only measures and associated GHG reductions that exceed state targets should be included in the CAP.

The draft states that “RCEA is currently on track to provide all customers with electricity that is sourced from 100% net-zero-carbon emissions renewable resources by 2030, 15 years ahead of the state target,” citing RCEA’s 2019 RePower Plan. This 5 year old document doesn’t reflect current reality. RCEA is moving backwards, cutting its renewable and zero-carbon power by over 50% for the next 2 years, which is the minimum required by the state, due to the RPS driving up the cost of renewable energy.⁴⁴ They hope to increase their percent of renewable energy in 2026 “financial conditions permitting,” but competition and high prices in the wholesale market may not resolve that quickly. Given this uncertainty, the plan should use the conservative assumption that RCEA’s portfolio will conform to the RPS.

The draft also states that RCEA’s electricity is lower carbon than PGE’s and uses this as one justification for departing from the California average energy consumption in the inventory. Comparison of RCEA and PGE power content labels from RCEA’s inception in 2017 to 2023 reveals that, not counting biogenic carbon, RCEA’s default plan was only lower carbon than PGE’s for 2 years out of the 7, owing to PGE’s high percentage of carbon free nuclear energy.⁴⁵ Measures that aim to entice PGE customers to switch to RCEA or prevent RCEA customers from opting out to PGE will not reliably decrease carbon emissions from local energy consumption.

The plan refers to the county’s success in requiring cannabis growers to use renewable energy as evidence of the effectiveness of a potential policy requiring new industries to use renewable energy. We support adoption of this policy but no substantial evidence was given to prove its effectiveness. Cannabis license holders report their energy use and sources to the state. The data is incomplete, but of the 22.4 GWh/ year consumed by the reporting license holders, only 6.2 GWh were renewable.⁴⁶ There is nothing in BE-1 to support the claimed GHG reduction of 15,403 MT CO₂e.

⁴⁴ RCEA July 24, 2024 Board Meeting

<https://redwoodenergy.org/wp-content/uploads/2024/06/June-27-2024-Board-Meeting-Agenda-Packet-Final.pdf>

⁴⁵ CEC Power Content Labels

<https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure-program/power-content-label> accessed Sept 2024

⁴⁶ California Department of Cannabis Control. Electricity use reported by Humboldt cannabis permittees provided in response to public record request May 2024

E. Alternative Measures to Reduce Emissions from Buildings

Since even renewable energy entails some emissions, efficiency reduces carbon emissions more than replacing fossil fuel with renewables. A kwh saved in Humboldt, where the actual electrons come from gas and biomass, cuts GHG more than a kwh in most of the state, where the power mix is cleaner.⁴⁷

Given the area's relatively low rate of new construction, the largest reductions in energy use from efficiency will come from existing buildings. With the majority of Humboldt's housing constructed prior to 1978 and the state energy code, there is significant potential for improvement. Envelope efficiency upgrades should come before heat pumps since a smaller appliance may be used, lowering both up front cost and subsequent electric bills, while decreasing demand on the grid.⁴⁸

Efficiency reach codes for new construction, renovation, and time of sale; reduced or waived fees, building performance standards, expedited permitting for energy retrofits, and energy benchmarking are measures used in other CAPs to increase building energy efficiency.

The Regional Climate Committee could create a Climate Corps program to do blower door tests and seal air leaks and ducts.⁴⁹ These home visits might also be a way of pinpointing gas water heaters and furnaces nearing the end of life and prioritizing them for pre-emptive replacement.

The Policy Studio's Cost Effectiveness Explorer has a "choose your own adventure" modeling tool specific to Humboldt's housing stock and climate that predicts the GHG reduction and financial impact on homeowners for various building energy policies.⁵⁰

F. Other Efficiency Measures for Local Jurisdictions

⁴⁷ Oates, DL Locational Marginal Emissions, 2021
<https://www.brattle.com/wp-content/uploads/2021/08/Locational-Marginal-Emissions-A-Force-Multiplier-for-the-Carbon-Impact-of-Clean-Energy-Programs.pdf>

⁴⁸ ACEEE. Empowering electrification through building envelope improvements.
https://www.aceee.org/sites/default/files/pdfs/empowering_electrification_through_building_envelope_improvements_-_encrypt.pdf

⁴⁹ BlocPower <https://www.blocpower.io/posts/civilian-climate-corps-warmth-comfort-skills>

⁵⁰ The Policy Studio. Online Cost Effectiveness Explorer <https://explorer.localenergycodes.com/>

The CAP should encourage local jurisdiction to pass ordinances requiring conversion of street lights from incandescent to solar or LED. Arcata, Fortuna, and McKinleyville CSD own their street lights. Some are still incandescent. Conversion to LED decreases energy use by 65% and pays for itself within a few years. Solar street lights don't require wiring to an external power source, lowering the cost of installation. Jurisdictions could form a purchasing alliance to decrease cost. EV charging could be incorporated into LED light poles on blocks with multifamily housing.⁵¹

XI. Building Decarbonization Can and Should Go Further

A. Measure BE-3, Residential Building Decarbonization

With all the incentives available now and in the near future, a 4% increase in existing residential building decarbonization isn't ambitious enough. We have the following suggestions on how to further decrease emissions from buildings.

An ordinance to improve indoor air quality in existing buildings by requiring replacement of gas stoves with electric induction at the end of life would have substantial gains for public health and equity, since indoor air pollutants reach higher concentrations in small homes, which often also don't have range hoods. Ideally this would be paired with an assistance program to help low income homeowners and owners of affordable multifamily housing access all rebates and incentives.

An ordinance adopting a revised version of the Title 24 Voluntary Measure for Existing Housing. The state version requires heat pumps when replacing air conditioners at end of life. Adding furnaces would make this requirement applicable in coastal Humboldt where people rarely have air conditioners.

Use installation permit records to identify and reach out to building owners with appliances nearing end of life.

Establish a Volunteer Home Energy Coach program in which volunteers are trained to guide other residents through decisionmaking about electrification and clean energy. Rewiring America is currently training cohorts of volunteers and 31 communities in Massachusetts have implemented coaching programs.⁵²

⁵¹ LPDD, Model Law: Municipal Ordinance for Using Street Light Poles for EV Charging <https://lpdd.org/resources/lpdd-model-law-municipal-ordinance-for-using-street-light-poles-for-electric-vehicle-charging/> and Reducing energy use in public outdoor lighting <https://www.aceee.org/toolkit/2015/01/reducing-energy-use-public-outdoor-lighting>

⁵² Rewiring America, Electric Coach Cohorts 2024 <https://homes.rewiringamerica.org/learning/electric-coaches> and Abode, Acton's Clean Energy Coaching Program, 2024 <https://abodeem.com/homeowners/community-programs/acton/>

B. Measure BE-7, Municipal building decarbonization should have a 2045 goal of 100%

The draft currently sets a goal of decarbonizing 30% of municipal buildings and facilities by 2030.⁵³ Unlike other measures, there is currently no goal for 2045. We suggest that Humboldt set the goal of decarbonizing 100% of municipal buildings by 2045. This goal would demonstrate that Humboldt's jurisdictions are committed to the State's goals and would help them lead by example.

XII. Measure TR-10, Renewable Fuels

This section is entirely misguided and should be eliminated. Doing so would not affect the qualified status of the RCAP since it is "supportive" and does not entail any specific reductions. Reasons to eliminate this section include:

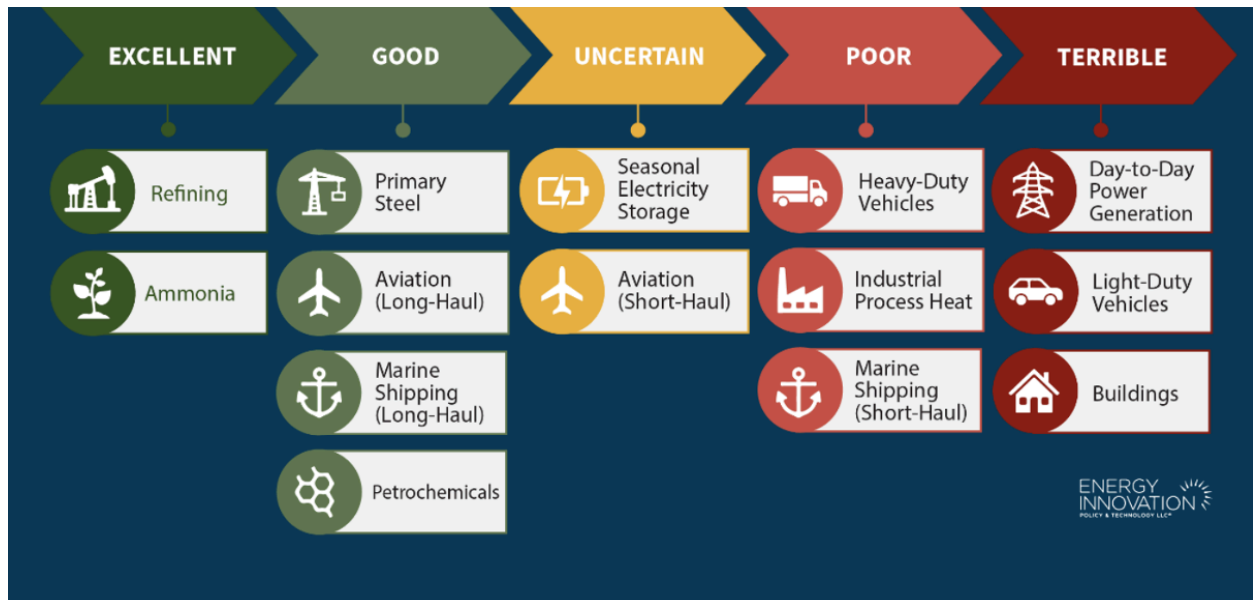
- The assumption that biofuels are carbon neutral is not correct. The Low Carbon Fuel Standard assigns a carbon intensity to each alternative fuel "pathway." These vary greatly and must be determined by an independent Life Cycle Assessment. Biogenic feedstocks that grow quickly have a relatively low carbon intensity. But woody biomass contributes directly to global heating because it takes 30 to 100 years for the trees to regrow. So uses of woody biomass cannot be considered close to carbon neutral in the time frame of the CAP.⁵⁴
- "Renewable natural gas" is primarily dairy biogas upgraded to biomethane. The LCFS erroneously assigns it negative carbon intensity values because dairy methane is not regulated. Our climate action plan cannot be predicated on the lack of regulation of the largest single source of anthropogenic methane in the state.
- The current draft of LCFS regulations adds a cap to renewable diesel, and, because it indirectly causes deforestation, it is not considered a climate mitigation in Europe. Our CAP cannot be based on an industry that is contributing to loss of forest sequestration.⁵⁵

⁵³ Page 41

⁵⁴ Booth, M.S., 2018. Not carbon neutral: Assessing the net emissions impact of residues burned for bioenergy. *Environmental Research Letters*, 13(3), p.035001; Fingerman, K. R., et al. (2023). "Climate and air pollution impacts of generating biopower from forest management residues in California." *Environmental Research Letters* 18(3). The CAP draft cites a 2014 NRDC document that is no longer current.

⁵⁵ Das, Arpita, and Samuel Lalthazuala Rokhum. "Renewable diesel and biodiesel: a comparative analysis." In *Renewable Diesel*, pp. 123-166. Elsevier, 2024. There are US consequences too: the price of corn has gone up, synthetic fertilizer use increased, and water pollution increased.

- Hydrogen is widely considered a climate-neutral energy source because when combusted it does not produce CO₂. However, if leaked into the atmosphere it has a warming effect because it reacts with methane and ozone. Because it is such a small molecule, “fugitive” hydrogen is a concern.⁵⁶
- “Green hydrogen” is needed for certain very difficult to decarbonize sectors, such as steel and cement and aviation. The graph below, from a just released report by the highly respected think tank Energy Innovations makes clear hydrogen has a narrow pathway.⁵⁷



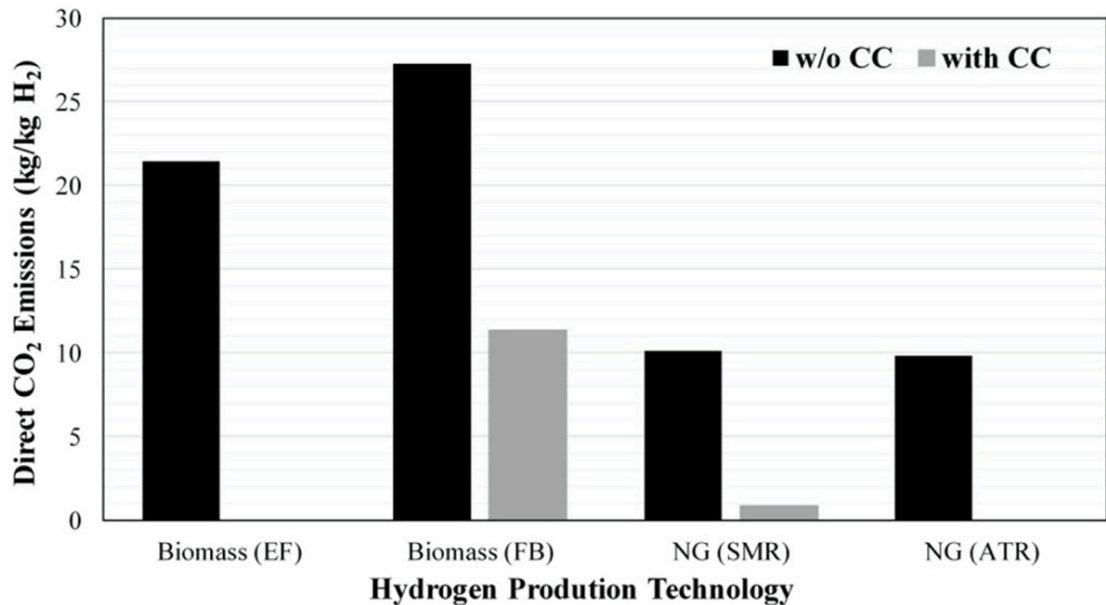
- However, there is virtually no green hydrogen available at this point. The Inflation Reduction Act contains large incentives for green hydrogen and it is hoped that by 2030 that industry can take off.⁵⁸
- The CAP should not endorse the use of any hydrogen for light vehicles, including fueling stations for light vehicles. HTA will be bringing fueling stations for buses and presumably some trucks and perhaps port equipment. 350 Humboldt supported the HTA grant on the assurance that the hydrogen would be green by 2028.

⁵⁶ Ocko, Ilissa B., and Steven P. Hamburg. "Climate consequences of hydrogen emissions." *Atmospheric Chemistry and Physics* 22, no. 14 (2022): 9349-9368.

⁵⁷ Energy Innovations, *Hydrogen Policy's Narrow Path Delusions and Solutions*, August 2024. <https://energyinnovation.org/publication/hydrogen-policy-narrow-path-delusions-and-solutions-report/hydrogen-policy-narrow-path-delusions-and-solutions-2/>

⁵⁸ There is much confusion about what constitutes “green hydrogen.” We believe it should be defined as it is in the Treasury Department’s draft 45V regulations as electrolytic hydrogen made from water according to the “three pillars”: a) the renewable energy used in making it is additional; b) the renewable energy is co-located; and c) the carbon intensity of the energy is based on 24/7 accounting.

- Hydrogen made from woody biomass is not green; the greenhouse gas emissions are higher than simple combustion because of the additional energy needed to pre-process the wood waste. The graph below shows direct CO₂ emissions from two types of hydrogen manufacture using gasification of biomass and two types of manufacture from natural gas (including steam methane reformation).⁵⁹ Even with carbon capture and sequestration the carbon intensity of manufacturing hydrogen from biomass is unacceptable. In contrast to the biomass processes in which over 20 kg of CO₂ are released per kg of hydrogen produced, the green hydrogen to be supported by the IRA must be no higher than 0.45 kg of CO₂ for each kg of hydrogen.



XIII. Refrigerants are Entirely Missing from the RCAP

Refrigerants are missing from the RCAP. When the improbable, unsubstantiated, inflated, and misclassified GHG reductions are weeded out of this draft, there's a big hole that needs filling. Thus far we've suggested alternatives within the same categories as the measures we commented on. Refrigerants are in a category of their own.

HFC and HCFC refrigerants have Global Warming Potentials from a few hundred to 13,000 times greater than CO₂. Reducing emissions of these extremely powerful short-lived climate

⁵⁹ Salkuyeh, Yaser Khojasteh, Bradley A. Saville, and Heather L. MacLean. "Techno-economic analysis and life cycle assessment of hydrogen production from different biomass gasification processes." *International Journal of Hydrogen Energy* 43, no. 20 (2018): 9514-9528.

pollutants can reduce near term warming by 0.4C. The Kigali Accord will, if followed, phase down HFC emissions 56% by 2050 but that falls short of the 70-80% reduction required to keep warming below 1.5°C.⁶⁰

Faster action than the US is currently pursuing would buy us time to reduce CO2 levels and limit warming close to 1.5°C.

The AEP Climate Change Committee's "The California Supplement to the United States Community-Wide Greenhouse Gas (GHG) Emissions Protocol" – the basic protocol used for the emissions inventory – contains virtually no information on refrigerant emissions, but it was published in 2013 and is out of date.⁶¹ More recent Climate Action Plans in CA have included refrigerants. Local data is available through the state's Refrigerant Management Programs's mandatory reporting program.

The primary source of refrigerant leaks in Humboldt County is supermarkets, with the EPA estimating leaks averaging 25% a year. The phasedown in state regulations is slow and limited. Humboldt County can make much faster progress.

Here are the current state standards:

⁶⁰ Purohit, Pallav, Nathan Borgford-Parnell, Zbigniew Klimont, and Lena Höglund-Isaksson. "Achieving Paris climate goals calls for increasing ambition of the Kigali Amendment." *Nature Climate Change* 12, no. 4 (2022): 339-342.

⁶¹ Rincon could request Humboldt County data on businesses with 50 lbs or more of refrigerants from CARB's Refrigerant Management Database, Tristan Pulido, Manager. 350 Humboldt received the 2019 data through a public records request. There are 102 supermarket refrigerant systems (sometimes more than one to a store) with a total GWP for the refrigerants of 131,329,801 metric tons of CO2e. If we use the EPA estimate that amounts to approximately, 26,000 metric tons of CO2e leaked each year, or roughly the same emissions as 2,925,622 gallons of gas consumed a year.

Existing Retail Food Companies

Company Size	Compliance Requirement	Date
Companies owning or operating 20 or more retail food facilities in California, and national supermarket chains operating in California.	Attain a company-wide weighted-average GWP of less than 2,500 or a 25% or greater reduction in GHGp below 2019 levels by December 31, 2026	December 31, 2026
	Attain a company-wide weighted-average GWP of less than 1,400 or a 55% or greater reduction in GHGp below 2019 levels	January 1, 2030
Companies owning or operating fewer than 20 retail food facilities in California	Attain a company-wide weighted-average GWP of less than 1,400 or a 55% or greater reduction in GHGp below 2019 levels	January 1, 2030

Since systems using CO₂ or propane are available with a GWP of 1 or less, there is clearly a large reduction possible beyond the existing regulations. It is likely that the Regional Climate Committee will need to apply for grants to assist independents and smaller markets. The County and cities can establish their own standards for chains.

Leak prevention is an important action to take in the short run, and leak detectors can be required. California air districts may enforce such requirements under agreements with the ARB, using funding provided through facility registration fees. (Portable handheld detectors can be purchased for a few hundred dollars Recycling of HFC refrigerants can be required.) The EPA has a voluntary program of leak reduction called Green Chill that markets can be urged to join.

Beyond the supermarkets and businesses with 50 pounds or more of refrigerant, approximately one-third of US refrigerant emissions come from air conditioners. There are relatively few in Humboldt County. However, there is a state and national push to install heat pumps. Unfortunately most of these now use HFC refrigerants, creating a large problem for capture and disposal at end of life. The Regional Climate Protection Board can publicize the heat pumps that do not use HFCs and establish fail-safe measures for capturing end of life HFCs. It can also promote CO₂ heat pump hot water heaters that do not use HFCs.

New regulations in the County and CAP cities could also require and incentivize HFC capture from smaller appliances at end of life. These include older refrigerators and freezers and automobile cooling systems.⁶²

⁶² New refrigerators use iso-butane and new automobile systems use R1234yf with zero GWP.

An example of how Humboldt could proceed is found in the Eugene, Oregon 2020 Climate Action Plan. The plan called for convening owners and servicers of commercial refrigeration units by the end of 2021 to identify market-based and regulatory options to reduce community-wide refrigerant gas leaks from appliances like air conditioners, refrigerators, and commercial refrigeration systems.⁶³

XIV. Other Comments

A. Natural Gas End Date

The draft currently considers setting an end of natural gas flow date and then chooses not to.⁶⁴ Humboldt County should set a target for an end of natural gas flow date in 2045.

In order to achieve this goal, the draft should more aggressively promote switching from natural gas to electric heating. For example, the current draft proposes to “require electrification of feasible equipment in association with major renovations” for commercial buildings but not residential ones.⁶⁵

B. Measure BE- 8, Local Distribution of Offshore Wind Energy

CAISO has already approved a transmission plan which, in addition to a new Humboldt 500 kV substation and long distance high voltage transmission lines, also includes a 500/115 kV transformer, a 115 kV line to Humboldt’s existing 115 kV substation, and a 115 kV phase-shifting transformer at the substation, which would make offshore wind energy available to our local distribution system.⁶⁶

CAISO’s plan makes it unlikely that wind power will bypass the local distribution system. The CAP should encourage jurisdictions should advocate for an affordable PPA for RCEA as part of a Community Benefits package.

⁶³ <https://www.eugene-or.gov/4284/Eugenes-Climate-Action-Plan-20> and <https://www.eugene-or.gov/DocumentCenter/View/71308/Refrigerant-Management-Guidebook> <https://www.eugene-or.gov/5267/Managing-Refrigerants>

Please see Appendix I for more detailed information about refrigerants in Humboldt County.

⁶⁴ Page 37

⁶⁵ Pages 37, 40.

⁶⁶ California ISO Greenlights Transmission Plan for Offshore Wind Integration <https://www.offshorewind.biz/2024/05/24/california-iso-greenlights-transmission-plan-for-offshore-wind-integration/> (May 24, 2024).

C. Measure WW-1 Underestimates Methane from Wastewater Treatment

Wastewater releases greenhouse gases, primarily methane. The RCAP discusses CO₂ emissions from combustion of anaerobic digester biogas and lagoon emissions. In fact, methane can be emitted from almost any aspect of sewage treatment. The RCAP uses emissions factors from the IPCC, which are in turn adopted by EPA. However, in the last year we have learned from a Princeton University team that directly measured emissions at 63 waste treatment plants (the largest study yet) that methane release is underestimated by a factor of two by the EPA.⁶⁷

1. Digesters in particular emit far more methane as leaks than the EPA assumes.⁶⁸
2. Much more routine monitoring of methane monitoring is necessary and, in all likelihood, all of the Humboldt wastewater treatment systems will need interventions.
3. This is actually a significant opportunity to reduce emissions because wastewater treatment plants are government owned and operated and intervention to fix leaks can be directly required by entities covered in the Humboldt RCAP.

XV. Conclusion: We Need Climate Action Now

2023 was the hottest year since global records began in 1850. We need climate action *now* to forestall the worst effects of global climate change. The development of the RCAP has been slow and marked by delays. We encourage jurisdictions to begin work towards implementing RCAP measures before the RCAP is finalized. We encourage the expeditious completion of this RCAP. Furthermore, we urge jurisdictions to immediately begin planning for the next iteration of the Climate Action Plan, as 2030 is quickly approaching.

Thank you for the opportunity to review this draft. We are happy to discuss any portion of these comments should you have any questions, concerns or comments.

Sincerely,

⁶⁷ Moore, Daniel P., Nathan P. Li, Lars P. Wendt, Sierra R. Castañeda, Mark M. Falinski, Jun-Jie Zhu, Cuihong Song, Zhiyong Jason Ren, and Mark A. Zondlo. "Underestimation of sector-wide methane emissions from United States wastewater treatment." *Environmental Science & Technology* 57, no. 10 (2023): 4082-4090.

⁶⁸ "We found plant-wide CH₄ emissions vary by orders of magnitude, from 0.01 to 110 g CH₄/m³ with high emissions associated with plants equipped with anaerobic digestion or stabilization ponds." Song, Cuihong, Jun-Jie Zhu, John L. Willis, Daniel P. Moore, Mark A. Zondlo, and Zhiyong Jason Ren. "Methane emissions from municipal wastewater collection and treatment systems." *Environmental science & technology* 57, no. 6 (2023): 2248-2261. (This was a statistical review of over 310,000 articles.)

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APPENDIX I: HOW MUCH GREENHOUSE GAS EMISSIONS ARE DUE TO REFRIGERANTS IN HUMBOLDT COUNTY?

The state Air Resources Board keeps a database, updated annually, of every business using HFCs that has equipment needing a refrigerant charge of 50 lbs or more. This is called the Refrigerant Management System. We obtained by public records request RMS data from 2019, 2021 and 2022. Like many administrative databases where the information required is not of use to those supplying it, compliance is somewhat inconsistent. This appears to be the case for 2020 data as 81 of 103 supermarkets reported zero refrigerant having to be replaced due to leaks, which is not plausible. Additionally, the leak rate data for the 2021 data was also not plausible (far too many systems were listed as having leaked several times the full charge amount) The data from 2022 look plausible but the number of sources was reduced from 103 to 63 which appears to be a mistake.⁶⁹ In the table below we show the number of businesses (overwhelmingly supermarkets) in the data from each year, the percentage with zero reported leaks, and the overall leak rate with and without the organizations reporting no leaks. We also show the total Global Warming Potential (GWP100) as used by CARB for the county supermarkets; and finally we estimate the likely GWP of leaked supermarket HFCs. The estimate for leakage is taken from the 2022 data and applied to the total from each year to provide a range of the metric tons of CO₂e leaked each year. We can be fairly sure that the metric tons of CO₂e leaked annually is between 19,000 and 45,000.

Humboldt County HFC Systems and Leaks: Annual CO₂e Emissions

	HFC systems	No reported leaks	Fraction of full charge leaked	Total GWP of charge in metric tons	GWP of leaked HFC using 2022 leak rate
2019	103	84%*	0.07*	131,000,000	44,540,000
2021	86	13%	1.11*	89,700,000	30,498,000
2022	63	44%	0.34	56,400,000	19,176,000

*Not plausible

It would obviously be useful to have reliable data, and perhaps Rincon can obtain it from CARB. However, it is simple to describe the goal: as many supermarkets as possible should switch to CO₂ or propane-based systems by 2030. As noted above the state only requires a reduction to

⁶⁹ For 2021 and 2022 we obtained statewide data. In 2021 there were 26,977 refrigerant systems but only 16,000 in the 2022 data. So apparently not all data was supplied as requested.

1,400 GWP refrigerant. But this would mean, since the state intends ultimately to reduce refrigerants to a GWP of under 150, that stores will be undergoing two remodels. It will be much more cost-effective and helpful to the climate if stores make only one change by 2030 – to GWP 1 or less refrigerants. The state’s FRIP program has substantial incentive payments for making this change.