

Natural Resources Commission Minutes
July 22, 2019; 6:30 p.m.

Present: Sarah Angulo (alt), Courtney Hall, John Johnston, Richard McCann,
Alan Pryor, Hannah Safford, Evan Schmidt

Absent: Greg Miller, Will Arnold (City Council Liaison)

Staff: Kerry Daane Loux, Sustainability Coordinator, Community Development &
Sustainability

1. Call to Order: 6:35 pm

Sarah Angulo, Natural Resources Commissioner (alternate) was sworn in. All Commissioners welcomed Angulo and briefly introduced themselves.

2. Approval of Agenda – Approved unanimously.

3. Brief Announcements from Staff, Commissioners and Liaisons

Richard McCann noted that the City of Berkeley passed an ordinance banning natural gas from all new low rise residential construction, to be effective in January 2020. Also, McCann commented that there is an opportunity for the city to apply for an Eco Adapt Climate Change and Vulnerability Planning Opportunity, with an application due August 30.

John Johnston noted that he attended the California Higher Education Sustainability Conference. He was particularly interested in the information related to microgrid-ready development at the Sonoma Junior College District.

Greg Miller sent a memo to the NRC in advance of the meeting, since he was unable to attend, with comments related to Brief Announcements and input on Regular Items (see memo copied below). He reported on his attendance at the Statewide Energy Efficiency Collaborative (SEEC) Forum in Long Beach. Kerry Loux was also in attendance.

4. Public Comment –

No comments were made.

Public attendees included Johannes Troost and Joshua Cunningham.

5. Consent Calendar – Approved Unanimously (Schmidt/Pryor)

A. Minutes – June 24, 2019 Approved as amended.

B. Urban Forest Grant Information

C. SB 1383 City of Davis Comment Letter July 2019

6. Regular Items

A. Residential Reach Code Ordinance

Greg Mahoney, Assistant Community Development Director, presented the draft ordinance to adopt a Residential Energy Reach Code to enact energy efficiency requirements for mixed-fuel single-family dwellings (SFD) and low-rise multi-family residential projects, for initial review and comment. Since the Energy Commission’s Residential New Construction Cost Effectiveness Study was released after completion of the Staff Report, the item will return to the NRC at the August 2019 meeting to provide additional information and analysis. The Reach Code will be presented at City Council on September 10, first reading, and September 24 for adoption.

During public comment, J Cunningham noted that Valley Climate Action Center is in support of this proposed approach to the Energy Reach Code. 40% of carbon emissions in Davis can be attributed to the built environment. Decarbonizing new construction is the first step toward community carbon neutrality. J Troost commented (as an individual and not representing the Utilities Commission) on addressing the impact on consumer rates related to this and other climate action issues.

Commissioner comments included support for this approach. R McCann noted that this is an appropriate phased approach toward electrification that allows for implementation in the short term, without the possibility for litigation that may be raised with a ban on natural gas. Alan Pryor noted that there are 3-5,000 new units potentially planned over the next 3-5 years, and more analysis and quantifiable costs and outcomes need to be provided in order to make good policy decisions. Hannah Safford agreed that this is important, but it is also important to be able to take action now, and encourage additional data-gathering as the ordinance is implemented. Evan Schmidt noted that it is important to provide consumer education along with the implementation of the Energy Reach Code. J Johnston commented that this is an approach to incentivize all electric construction.

A Pryor requested information on 1) construction cost differences, and 2) more exact GHG calculations between mixed fuel and all electric homes when implementing this ordinance. G Mahoney noted that he would work with Misti Bruceri, consultant for the Cost-Effectiveness Study, to get clear cost comparisons.

The following motion was made by H Safford, seconded by Courtney Hall, and approved unanimously:

The NRC supports the general approach to the Residential Energy Reach Code as presented by staff (7-22-2019), to require an Energy Design Rating (EDR) margin for mixed-fuel residential projects, as a step toward an all-electric ordinance in the future.

B. Organics Facility Feasibility Final Report

Richard Tsai was present at the meeting to answer questions on the final report on the Organics Facility Feasibility Study, including responses to NRC questions from the June 2019 meeting. R Tsai distributed information from the NRC Waste Subcommittee that had been submitted to staff and the consultant (see memo copied below).

At the beginning of Commissioner discussion, the following motion clarifying the intent of last month's motion was made by R McCann, seconded by Pryor and approved unanimously:

The NRC appoints Commissioner Courtney Hall (or suitable substitute, if needed) as NRC representative to attend and participate in all URAC meetings pertaining to the organics facility feasibility deliberations.

Commissioners discussed the following suggestions for next steps in the organic facility planning.

1. The feasibility of composting needs to be verified. The waste characteristics for the city and UCD are very different, particularly because of the large amount of animal bedding in the UCD waste. It would be advisable to verify that the mix of city and UCD waste composts well, and that the resulting product can be marketed successfully. This might require a pilot test.

2. A more detailed examination of the proposed composting system is needed. For instance, it is important to determine whether CASP will be required by the Yolo-Solano AQMD. As noted in the Clements report, the AQMD has not determined the requirements for air quality mitigation measures. Using CASP vs. static aerated piles doubles the estimated cost per ton. A test funded by the San Joaquin Valley Air Pollution Control District found that a compost-covered extended aerated static pile system (no membrane like in CASP) showed significantly smaller emissions than windrow composting. A similar pilot test performed with city or city/UCD mixed waste may be needed to the AQMD make a determination.

Despite higher apparent costs, there may be other reasons to consider CASP. The total solids retention time needed for CASP relative to static pile is considerably less (56 days vs 90–120 days, respectively), which means the processing site can be smaller (2 acres vs 15 acres, respectively). Depending on how the WWTP is to be developed, there may be economically productive ways to use the land saved by employing CASP that would offset the greater cost of the CASP system.

3. Mitigation of the GHG emissions associated with the composting operation should be explored. According to the WARM model (which admittedly has its limits) composting waste produces more GHG emissions than landfilling due to the smaller amount of carbon sequestration. There are interesting options to explore to offset these emissions and support the city's climate emergency goals is greater GHG emissions. Included in these are (1) carbon farming on Howat Ranch the city's 400+ acres south of the WWTP, (2) planting a carbon mitigation forest and maintaining it with reclaimed water from the WWTP, and (3) encouraging best practices in the region for using compost, including maximizing residential uses.
4. Re-evaluate the city's mixed green/food waste pick-up program in light of new requirements and conditions caused by AB1383 and other factors. The small (<5%) fraction of the city's mixed organics that is food waste seems to be having a disproportionate effect on organics processing. It caused Yolo County tipping fees to increase substantially and its presence seems to trigger more restrictions on composting operations. Questions to be considered include: (1) what is the generation rate of food waste in the mixed organics stream, (2) what impacts on a city composting operation are caused by the presence of food waste as opposed to green waste only, (3) what are relative GHG emissions of directing food wastes to a landfill with methane gas recovery vs. composting, and (4) can the city meet its legal obligations for diverting total organics if food wastes are redirected to the general solid waste stream?

The following motion was made by J Johnston, seconded by A Pryor, and approved unanimously:

The NRC recommends setting aside the following two options identified in the Organics Facility Feasibility report, based on environmental issues and concerns:

- *The Recology option because of the greenhouse gas (GHG) emissions associated with travel. Additionally, the compost is not used locally and the City has no control over the destination.*
- *Anaerobic digestion (AD) option because of larger GHG emissions; this recommendation should be reconsidered if the waste characteristics change in the future.*

Additionally, the NRC recommends focusing more study on composting, which has additional benefits, including healthier soils, improving water holding capacity and decreasing demand for water.

Subsequently, the following motion was made by H Safford, seconded by J Johnston, and approved unanimously:

Among the site location options in the Organics Facility Feasibility report, the NRC does not see strong environmental benefit reasons to favor one scenario over another.

C. Subcommittee Updates –

Subcommittee updates were tabled until the August meeting.

7. Commission and Staff Communications

- A. Long Range Calendar—note that an August 26 2019 meeting is planned
- B. Community Development Department Project Log
- C. Upcoming meeting items/events

8. Adjourn: 10:10 p.m.

Additional Information provided at the meeting:

Comments in advance of the meeting from Commissioner Greg Miller (absent for the meeting)

From: Greg Miller

Sent: Friday, July 19, 2019 6:42 PM

To: Kerry Loux ; Johnston, John ; Hannah Safford

Subject: Comments for Monday's NRC Meeting

Hi Kerry, John, and Hannah,

I regret that I will be unable to attend this Monday's NRC meeting. I have prepared comments and questions that I hope can be made available to the commission to review or which can be read at the appropriate times of the meeting.

Given my interest in the discussion around the reach code, I would like to ask if someone might be willing to record the entire discussion on their phone and send it to me so that I can listen on my plane ride back. I would greatly appreciate it.

Attached:

- Greg Miller Comments (doc). See below.
- Electrification Ordinance Revisions (doc) - these are the proposed revisions and comments that the Energy Subcommittee has on item 6A.2, the draft presented by the city.
- Berkeley PDFs: Live reporting on the passage of the Berkeley natural gas ordinance last week that is worth a read to give us a better idea of what we may expect.

Thank you, and apologies again that I cannot be there in person. Please convey my warmest welcome to our new commission member!

Greg

Brief Announcements

Statewide Energy Efficiency Collaborative Forum: I attended, main take aways:

- Gas companies are going on a heavy marketing counter offensive to electrification, and promoting “customer choice” for the fuel that “customers prefer.” Their plan for decarbonizing California’s gas seems to be tapping the entire country’s biomethane capacity.

- By 2050, our personal carbon budget should be 2 metric tons per person per year, or 5.5 kg per day
- The city of Davis should look into joining Energy Upgrade California with a proclamation – focused on changing when we use energy to “keep California Golden”
- Our goal should be “zero emissions buildings” not “zero net energy” buildings
- Davis should look into joining the California Green Business Program and certify our local businesses
- Heard a lot of great presentations on community microgrids, reach codes, energy master planning, and electrification

Residential Reach Code Ordinance

Observations

- As written, this reach code is an electric building incentive, not mandate. Given the urgency of the climate emergency, I would urge the city to adopt a reach code that results in no additional natural gas infrastructure being built in the city.

Outstanding Questions:

- My understanding is that the “express findings” come from Section 18941.5(b) of the Health and Safety Code, which states: “Neither the State Building Standards Law contained in this part, nor the application of building standards contained in this section, shall limit the authority of a city[...] to establish more restrictive building standards, including, but not limited to, green building standards, reasonably necessary because of local climatic, geological, or topographical conditions.” Do the express findings simply allow us to develop a reach code, or do they mean that a cost-effectiveness study is also not necessary?
- My understanding is that under the current “incentive” model of our ordinance, a developer could still choose to build a mixed-fuel house, but that it would simply cost more. What would a developer have to do to comply with this reach code if (s)he and still build mixed-fuel? In other words, is this enough of a disincentive to effectively ban natural gas?
- We don’t just want electrification – we want efficient electrification. Because we are relaxing the efficiency requirement of all-electric homes as an incentive, I am concerned that the electric appliances installed in all-electric homes may not be adequately efficient. Is the standard building code going into effect strict enough that builders will still need to install heat pumps, induction cooking, etc. to meet it, or is my concern justified?

Recommendations

- Berkeley just passed its stricter natural gas ban last week. At the city council hearing, a PG&E representative testified that their company supports their ordinance and the move to all-electric buildings. Given the fact that our natural gas supplier is in support of electrification (reducing the perceived risk of lawsuits), I would urge the city to consider a stricter ordinance in line with Berkeley’s which explicitly bans natural gas connections for new buildings.
- Although the express findings presented in the city’s draft reach code have been used for previous codes, they seem out of touch with the current purpose of this reach code. In addition, this reach code will be under much more scrutiny than previous codes because of its ambition, so coherent, convincing, and well-reasoned findings are necessary to support the update. Thus, I strongly recommend that the express findings as revised by the NRC Energy Subcommittee (with any necessary edits) be adopted as the express findings in support of this reach code.
- Given the need for adaptation and resilience, and the vulnerability of all-electric homes to public safety power shutoffs and other grid outages, I would recommend that resilience be considered in this

ordinance as well. This means that in addition to requiring the conduit/etc for battery storage, that the building also be wired with a transfer switch or other technology that allows the building to be islanded from the grid in the case of an outage. Even if a building has a battery, if it does not have island capability, it will still lose power during a grid outage due to the danger of backfeed onto distribution lines.

- I would not be opposed to an August NRC meeting if needed for further discussion/action on this item.

Organics Facility Feasibility

- My recommendation would be to co-locate the organics facility with the Davis WWTP. With the increasing risk of public safety power shutoffs and the need for greater local resilience, having a source of biomethane that could help power the WWTP when grid electricity is not available will be critical for the city's adaptation to the impacts of climate change.
- From a decarbonization perspective, any biomethane power turbines should primarily be run at night in order to come closer to 24/7 renewable energy, or supplying 100% of the facility's energy needs with renewable energy, every hour of every day. The adjacent solar farm helps achieve this goal during daylight hours, but we need solutions to supply renewable energy at the times when solar is not available.
- While the revised WARM analysis seems to show that landfill with gas recovery promises the best GHG reductions, but we must also consider other environmental impacts of landfills and the fact that the organic material becomes lost for use as compost.

From: Johnston, John <johnston@saclink.csus.edu>
Sent: Monday, July 22, 2019 6:05 PM
To: Kerry Loux <KLoux@cityofdavis.org>
Subject: organics talking points

I am bringing the attached (below) in paper form. I think it will help out conversations tonight. In the event that some of this language is proposed in a resolution, I am sending you an electronic copy.

Organics – Potential Next Steps (discussion points)

1. Set aside:
 - Recology option because of the travel GHGs
 - AD because of the larger GHG emissions
2. Verify that the mix of city and UCD waste composts well. Pilot test?
3. Determine whether CASP is needed (i.e. required by YSAQMD). Perhaps perform pilot test to measure emissions like that done in SJVAQMD. In SJV's test, they found significant reductions with 12" of compost without the membrane. Using a membrane or not doubles the cost according to Clements.

Note that emissions aren't the only reason to consider CASP. Other reasons are (1) the considerably lower total retention time needed for CASP relative to static pile (56 days vs 90–120 days, respectively), and (2) the considerably smaller amount of land needed for CASP relative to static pile (2 acres vs 15 acres, respectively). Although the city WWTP site is more than large enough to accommodate either approach at the moment, we should think carefully about this point—especially if there are economically productive ways to use the saved land that would offset the greater cost of CASP.

4. Since the result of composting instead of landfilling is greater GHG emissions, explore compatible projects to offset these. Examples would be carbon farming on the city's 400+ acres south of the WWTP or planting a carbon mitigation forest.
5. Explore more deeply the advantages/disadvantages or costs/benefits of City-owned facility on the WWTP property (for reasons Clements emphasizes—ability to control our own destiny, potential for synergies with WWTP, low proximity to sensitive areas). (This may be a URAC project.)
6. Evaluate the ramification of mixing food waste with green waste and consider whether it should continue. At the moment, the 5% that is food waste seems to be having a disproportionate effect on organics processing. It caused Yolo County tipping fees to increase substantially (URAC presentation). It seems to place more restrictions on composting operations (the Zamora contractor was not permitted to compost food waste). Explore the costs and benefits and legalities of modifying the mixed organics program. Would requiring residents to separate food and green waste be advantageous? Would putting food waste in the landfill produce fewer GHG emissions? Are these moot questions from a legal standpoint (i.e. does state law mandate that all food waste be removed from landfill-bound streams)?