

Southern Oregon Climate Action Now

SOCAN

Confronting Climate Change

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March 24th 2021

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SOCAN Comments on DEQ RAC 3

First, I would like to compliment DEQ staff again on the transparency of the process and their willingness to accept public comment on the developing Climate Protection Plan.

Second, I would like to express appreciation for the thoughtful creativity that led to the development of a Community Climate Investment program as a way of thinking about and addressing the issue of Alternative Compliance Options (offsets).

My comments will largely follow the sequence in which issues were originally raised during the RAC 3 meeting.

A Goal of Electrification?

Early in the March 18th meeting, a question was posed by a proponent of Renewable Natural Gas (RNG) about whether the goal of DEQs Climate Protection Plan was to promote electrification across the economy. In response, Manager of the DEQ Office of Greenhouse Gas Programs Colin McConaha indicated that he supported RNG while DEQ Director Whitman indicated he also supported RNG and added Hydrogen.

Electrification is reasonably argued as a positive step in efforts to reduce greenhouse gas emissions from the transportation sector because electric motors are vastly more efficient than the Internal Combustion Engine (ICE), so electric vehicles are preferred even if the electricity is generated from a fossil-fuel-powered facility. Meanwhile, in general domestic, commercial, and industrial settings, electricity is a preferred energy source especially if it is generated from genuine renewable energy largely in the expectation the electricity generation will turn away from fossil fuels. One concern with promoting electrification, however, is that, if successful, this will likely increase the demand and thus the generation need. If electricity generation is from natural gas plants, and these remain unregulated, enhanced electrification of our economy could increase the greenhouse gas emissions resulting from natural gas usage (see

Fossil Gas Myth below). However, we must anticipate that electricity generation will soon become localized and based on renewable sources.

Community Climate Investments.

As indicated above, I found this concept encouraging. However, I remain confused as to the extent that these investments must involve projects that result in greenhouse gas emissions reductions or removals. As the discussion proceeded it seemed that at times this was the expectation, but at other times it was not. While I can see great merit - in a general sense - in promoting investments in social justice projects that benefit low income or disadvantaged communities generally, since the authority for the Climate Protection Plan stems from the Governor's Executive Order targeting greenhouse gas emissions through an equity lens, it seems reasonable that either GHG emissions reductions or removals should be required of any project earning investments from this program.

In terms of the principles that should be required in establishing these investments, I offer the following:

- 1) Any emissions reductions or removals should be credited on a 1 for 1 basis, so each ton of GHG reductions or removals counts for one ton of compliance.
- 2) In order to facilitate projects that meet equity goals as well as GHG reduction/removal goals, projects that do both should be favored.
- 3) It is not clear to me from where the values of \$50, \$100 or \$200 per ton as C charges came or how these were justified.
- 4) While it is inevitable that any projects receiving investments would have to be third-party certified as actually leading to reductions or removals, it is not clear to me why a third-party agency is necessary to serve as an intermediary between the investor and the project manager in terms of the funding stream. Why is it not possible to allow the investor to invest directly with the project manager in approved projects? The certifying agency could then provide the investor with certificates of GHG reduction or removal achievement once this has been verified.
- 5) Whether investment projects should be restricted to Oregon is problematic. On one hand, this would certainly make any potential projects easier to certify and would better assure they serve Oregonians. However, on the other hand, since Oregon has a wealth of potential sequestration opportunities, we might find restricting these to Oregon has unforeseen negative consequences. One of these could be that other jurisdictions developing climate action plans might respond to our restriction by precluding their potential investors from investing in Oregon projects. Maybe investment projects could be restricted to jurisdictions that have a climate action plan exhibiting at least equivalent rigor to that in effect in Oregon.
- 6) It is critical that any projects that are the subject of this program not be double-counted in the overall Oregon Climate Action Program.

- 7) In order to protect Climate Protection Plan legitimacy and credibility, certain restrictions should be applied on participation eligibility for potential investors:
- a. Before eligibility to invest is awarded, potential investors should demonstrate either they have installed best available emissions reduction technology or have concrete (contracted?) plans to do so within (say) two years.
 - b. Investors should be precluded from investing to offset GHG emissions from facilities that emit co-pollutants that compromise the air quality of neighboring communities.
 - c. Since the purpose of the Climate Protection Plan is to reduce or remove emissions, it is unreasonable to allow emitters a substantial investment option because that would allow them to evade the purpose of the program. We know that negative emissions (i.e., sequestration from the atmosphere) is necessary if we are to limit global warming to the target of 1.5°C (2.7°F) above pre-industrial conditions, so encouraging investment in sequestration projects represents a valuable contribution to the effort. However, allowing these investments to count a substantial amount towards an emitters compliance obligation simply undermines the effectiveness of the entire program. Based on nothing more than subjective judgment, 5% seems rather small and potentially fails to allow facilities having difficulty achieving reductions a reasonable alternative, while 25% seems excessive and potentially allows emitters far too great an opportunity to evade their responsibility to reduce emissions.
 - d. As the cap and reduce program of compliance instrument allocations proceeds, future calculations should be based on current allocations. Compliance achieved by investments rather than reductions should not be discounted in future reduced allocations.
 - e. Projects receiving investment that either result in emissions reductions or removals should be monitored for leakage and any leakage detected should be accounted in the assessment of certification totals. For example, if a forest sequestration project in location A, results in increased timber harvest in location B, the increased emissions in location B should be deducted from the sequestration recorded in location A.
- 8) For emissions reductions or removals to be certified, they must be:
- a. Real
 - b. Measurable
 - c. Additional
 - d. Long-lived replacing the requirement of Permanent because carbon in biological systems is dynamic and exhibits constant flux. We do not expect any single carbon atom to be sequestered in vegetation or soil permanently, but for an extended period so the amount stored increases over time.
 - e. Monitored
 - f. Verifiable

The Fossil Gas Myth

In considering how to reduce greenhouse gas emissions, it is important to appreciate that all fossil fuels result in greenhouse gas emissions. While the majority of these emissions occur when the fuel is combusted, emissions also occur throughout the lifecycle of those fossil fuels: during extraction, processing, and transmission/transport. When the life cycle emissions are gases that are more potent as warming agents than carbon dioxide, it is important to assess these emissions. In the case of natural gas, the prime gas emitted throughout the lifecycle prior to combustion is methane. This is because natural gas is some 90% methane, this gas leaks (called fugitive emissions), and methane is some 86 times more powerful than carbon dioxide as a global warming agent on a 20-year basis and some 34 times worse on a 100-year basis. Assuredly, natural gas companies would prefer that leakage does not happen, but they have seemed been unable to stop the phenomenon. While the claim that fossil gas is 'the clean fossil fuel' may have persuaded many folks that this gas is clean, it most profoundly is not (<https://socan.eco/fossil-gas/>)! While new extraction facilities and new pipelines may well result in fewer leaks than aging structures, the reality is that every new structure ages. With an expected life span of up to 50 years ((e.g. [WILLIAMS TRANSCO CENTRAL PENN LINE SOUTH: A CITIZEN'S GUIDE](#)), it is inevitable that pipelines will age and leakage will increase. Regrettably, the fugitive emissions of methane over the fossil gas lifecycle negate combustion benefits of this fuel compared to coal and oil. A study of emissions from natural gas versus electricity in California revealed: "The largest driver of greenhouse gas emissions savings in all-electric buildings comes from eliminating carbon dioxide emissions from natural gas combustion." ([Mahone et al. 2019](#)).

Even if we forget the lifecycle emissions that result from natural gas extraction, processing and transmission, and focus only on the emissions of greenhouse gases during the end use and in the generation of electricity (https://en.wikipedia.org/wiki/List_of_power_stations_in_Oregon#Natural_gas), we find that these emissions resulted in 10.8 MMT of greenhouse gas emissions in 2019 in Oregon (<https://www.oregon.gov/deg/aq/programs/Pages/GHG-Emissions.aspx>). This represents over 50% of the emissions from permitted facilities in 2019 and over 20% of total regulated In-Boundary emissions for 2019. There can be little doubt that natural gas is not a solution. The solution offered by the Gas industries is to convert to so-called Renewable Natural Gas. The problems with this are discussed immediately below.

Renewable Natural Gas

Essentially two methods are available for producing the methane that comprises so-called Renewable Natural Gas (RNG): one process realizes a **synthetic RNG** product that results from splitting water (H₂O) molecules into hydrogen and oxygen and then inserting the hydrogen into carbon dioxide (CO₂) to produce methane (CH₄) with oxygen as a by-product. The process is energy intensive so this process can only result in a renewable product if the energy source is itself renewable and not a fossil fuel. Note, this is also the mechanism for producing Hydrogen.

The second process involves capturing the methane that results from decomposition of biomass under oxygen free (anaerobic) conditions. The **biogas** results from decomposition in an anaerobic digester where bacteria break down the organic matter and release methane. This is what happens in landfills that are covered and sealed. One problem with this is that to produce substantial methane requires a vast amount of decomposing organic matter. However, one advantage of this process over the fracked natural gas alternative is that it requires a sealed environment thus eliminating the leakage that occurs in fracking. However, leakage that occurs during transmission under pressure through pipelines remains, so methane leakage as pipelines age remains a problem. A relatively plentiful source of biogas is the decomposition of manure in Confined Animal Feedlot Operations (CAFOs) so we must beware that reliance on RNG does not become a justification for expanding the development of this unfortunate industry.

The main environmental concerns regarding RNG are availability, cost, carbon intensity, and industry obfuscation as discussed briefly here: [The Four Fatal Flaws of Renewable Natural Gas](#). Meanwhile, a [recent 2020 report](#) revealed: “RNG is not inherently climate friendly. Based on consideration of both the source of methane used to produce RNG and the likely alternative fate of that methane, and using reasonable assumptions about likely system methane leakage, it is unlikely that an RNG system could deliver GHG negative, or even zero GHG, energy at scale.”

The bottom line with RNG is that it should not be considered a renewable solution unless its production and transmission result in net zero emissions, it is sufficiently available to replace natural gas, and that it is cost effective compared to genuine renewable energy sources. However, [Mahone et al \(2018\)](#) report that, for California: “RNG faces large technical obstacles. Biomethane supplies within California are limited, and on their own fall short of meeting the long-term demand for low-carbon gaseous fuel in the state’s buildings and industries, without electrification.” If RNG is insufficient for replacing natural gas in California, is there any reason to think Oregon is different?

Threshold for Fuel Suppliers

In discussing the threshold for inclusion of fuel suppliers in the program, DEQ offered 300,000 MT accounting for 86% of emissions, 25,000 MT accounting for 99% of emissions and 5,000 MT accounting for 99.8% of emissions as potential values. Unfortunately, 300,000 should simply not even be considered (see below) since it would blow the EO 2050 target.

Given the comments by a fossil fuel apologist about the likelihood of fuel suppliers simply gaming the system to keep their emissions below whatever threshold is applied, I have come around to the position that the threshold should be as close to zero as possible to allow an exemption for *de minimus* emitters.

What the calculation presented below reveal is that the Climate Protection Plan simply cannot allow any further exemptions of any meaningful capacity if the Governor’s Executive Order 2050 goal is to be within range

The DEQ ‘leaning’ regarding electrical utilities.

As we know, the Department of Environmental Quality is developing a Climate Protection Plan designed to address the Executive Order 20-04 signed by Governor Brown in March. 2020.

This order charges state agencies with reducing greenhouse gas emissions in Oregon at least 45% below 1990 levels by 2035, and at least 80% below by 2050. It is inevitable that, in order to achieve the interim target and final goal, the agencies will be obliged to achieve reduction of emissions within their purview a commensurate amount.

When the agencies began their discussions last year of how to develop a response to the charge in the EO, I was very impressed, excited and enthusiastic about how DEQ initiated the process. This was generated by the open and transparent nature of the process and the willingness of staff to listen to suggestions. However, as the months have passed, my enthusiasm has waned as the developing program has seemed not only to ignore submitted comments, but also to ignore the interim target and goal stated in the E.O.

Most recently, DEQ has identified as a strong ‘leaning’ in its proposed Climate Protection Plan exempting the electricity sector. This means that electricity generation facilities fueled by fossil (natural) gas will be

Oregon Natural Gas Electricity Generation		
PGE	Boardman	2543943
Hermiston Power LLC		1700894
PGE	Coyote Springs	1364781
Klamath Cogeneration		1350083
Hermiston Generating CO		1154924
PGE	Carty	1152211
PGE	Port Westward I	1027716
PGE	Beaver	274905
PGE	Port Westward II	186666
Klamath Energy LLC		49,735
TOTAL		10805858

exempt from the program. This creates a serious flaw in the program because:

- (a) natural gas extraction, processing and transmission result in substantial emissions of the potent greenhouse gas methane thus causing phenomenal leakage of emissions out-of-state (see Fossil Gas Myth above), and
- (b) because these facilities themselves (see adjacent table) emit huge amounts of greenhouse gases as CO₂e.

Oregon’s estimated total greenhouse gas emissions for 2019 stands at 65 Million metric tons. Of this, as can be seen in the adjacent table from DEQ facility data for 2019, the total emissions from Oregon’s natural gas-powered generation facilities are 10,805,858 MT of

carbon dioxide equivalent greenhouse gases. This amounts to 51% of source emissions for which DEQ issues permits and nearly 17% of the state’s total emissions. This, alone, should indicate we cannot afford **not** to cap and reduce these emissions.

Notably, total GHG emission for 1990 are listed by DEQ at 58 MMT. If the state is to achieve emissions 80% below the 1990 level, that target is 11.6 MMT. If the 2050 goal is to be taken seriously, clearly the electricity sector exemption suggested by DEQ means there is almost no opportunity to exempt any other emitters beyond that sector.

Unfortunately, in considering the threshold for inclusion in the fuel supplier emissions, DEQ offered as an option the following cut-offs: 300,000 MT which would address 86% of emissions; 25,000 MT which

would address 99% of emissions; and 5,000 MT addressing 99.8% of emissions. Given that the total for 2019 emissions from fuel suppliers is listed at 24.1 MMT, this means these cut-offs would respectively add to annual emissions 3.74 MMT, 0.241 MMT, and 0.0482 MMT.

Mathematically, the 300,000 MT cut-off is simply not an option since that, added to the natural gas facility emissions exemption of 10.81 MMT, would result in some 14.12 MMT of emissions and blow through the 2050 goal by over 2.5 MMT. This would render the EO goal completely unachievable regardless of what any other agency achieves.

Furthermore, this calculation does not even account for the fact that the drive to electrification, which is most valuable if that electricity is generated from renewable energy sources, will cause an increase in demand that, absent DEQ regulation, will likely be met by the utilities increasing their fossil gas usage rather than turning to renewable energy sources.

I have been engaged in advocacy for climate action for some three decades. I was alerted to the threat posed by global warming projections when teaching ecology at Southeast Missouri State University. While teaching a segment on community ecology - i.e., the factors of temperature and precipitation that determine the distribution of natural ecosystems (forests, woodlands, grassland, deserts, wetlands, tundra) across the globe, I realized that the projections at the time would devastate these ecosystems and the biodiversity of flora and fauna they comprise. We have since seen a massive increase in extinctions, confirming that fear. Incidentally, our agriculture, forestry, and fisheries are dependent on the same factors. If we do not collectively reduce our greenhouse gas emissions and remove a substantial percentage of those already released, we will confront an existential crisis. This is urgent. Anyone who is not alarmed, is simply not paying attention. We owe it to our children and grandchildren - if we care about them - to take this seriously. Oregon should do its part to reduce and remove greenhouse gases.

We urge the state DEQ to take seriously the interim target and goal identified in the Governor's EO. This would at least mean eliminating from consideration the 300,000 MT threshold for fuel suppliers. However, more importantly, it should mean rejecting the DEQ 'leaning' towards exempting the electricity sector. Thus, natural gas-powered electricity generation facilities would be included in the program and be required to reduce emissions.

Sincerely,

Alan R.P. Journet

A handwritten signature in black ink that reads "Alan R.P. Journet". The signature is written in a cursive, flowing style.

Co-Facilitator
Southern Oregon Climate Action Now