

**From:** [Ulmer, Jared \(he/him\)](#)  
**To:** [Lazorchak, Jane](#); [O'Toole, Megan](#); [Patrick Field](#)  
**Cc:** [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting  
**Date:** Tuesday, July 12, 2022 4:55:37 PM  
**Attachments:** [image001.png](#)

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Hi Jane,

Here's an updated response:

1. **Health effects associated with McNeil & Ryegate** – Based on the available data sources I have reviewed, the health impacts caused by air pollution from the two biomass power plants are essentially negligible and thus cannot be elaborated on in any detail. Instead, my presentation elaborated on the health impacts from residential wood combustion because our data indicate those emissions are associated with measurable health effects. This is mainly a result of the two generating facilities operating with relatively efficient combustion technology and with extensive filtration, pollution controls, and regulations that in combination greatly limit emissions. In contrast, residential wood burning occurs at a comparatively inefficient scale with minimal pollution controls, where emissions vary widely based on stove characteristics, fuel characteristics, and stove usage behaviors.
  - a. A question was raised about whether rates of asthma and cancer were higher near the two biomass power plants. In short, I cannot find any evidence to suggest that nearby asthma or cancer rates are influenced by either power plant. This is based on 1) the disease rates near either facility do not differ substantially from the rest of Vermont, and 2) published scientific evidence suggests that the amount of air pollution from either facility should not have a measurable impact on asthma or cancers. Although a disease cause cannot easily be determined just from looking at disease rates on a map, there's no indication from our data that the disease rates near either facility are in any way abnormal.
    - i. **Asthma** – [This map displays rates of emergency department visits for asthma](#) from 2017-2019 by sub-county areas consisting of one or more census tracts. All sub-county areas near the biomass power plants have average to below-average rates except for one slightly above average sub-county area to the north of UVM. Asthma rates are substantially higher in St Albans, Rutland, Springfield, and Newport. Please note that due to changes in data sharing agreements with MA, NH, and NY, data since 2013 may undercount how many Vermont residents were either hospitalized or treated in the emergency department, especially in areas served by neighboring states.
    - ii. **Cancer** – There is strong evidence that air pollution increases risk for lung and bronchus cancers but mixed evidence for other cancers. About 80-90% of lung cancer deaths are attributable to cigarette smoking. [This map displays incidence rates for the most common cancers](#) at the county level and sub-county areas. For lung and bronchus cancers, Chittenden County has a below-average five-year rate while Caledonia County has a near-average rate. All sub-county areas near the power plants have near-average

10-year rates except for the Old North End sub-county area has an above average 10-year rate. I spoke with our Cancer Registry director about this and she noted that only about 4 percent of cancers are linked to environmental pollutants, with family history, alcohol and tobacco use, diet, and physical activity being much stronger risk factors, though every type of cancer has unique risk factors. She also noted that making an environmental linkage is complicated by the length of time that might pass between an environmental exposure and detection of cancer, which could occur in different locations. She does not recall ever receiving an inquiry from the public or a physician about cancers potentially linked to the biomass power plants, and she did not notice any alarming patterns in cancer data near either facility. She offered to present more information about cancer risk if helpful, and much of this info and more data can be found at <https://www.healthvermont.gov/wellness/cancer>.

2. **Comparing wood versus oil/gas as a heating fuel** – I indicated that particulate emissions are much worse from wood combustion as compared to oil/gas, and overall, there are much greater health impacts associated with outdoor air pollution from residential wood combustion as compared to health impacts associated with outdoor air pollution from residential oil/gas combustion. While I hope health impacts associated with outdoor air pollution are an important consideration, I do want to point out that there are many other impacts (health, economic, environment, climate change and its secondary impacts on those areas) that presumably should also be considered and weighed. Burning any fuel will have many different pros and cons on different time scales. My presentation was primarily focused on comparing near-term health impacts associated with air pollution from different home heating fuels and equipment.

Hope this helps!

Best,  
Jared

**Jared Ulmer, MPH, AICP** (he/him/his)  
Climate & Health Program Manager  
Vermont Department of Health  
108 Cherry Street, Burlington, VT 05402  
802-865-7762  
[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)  
[healthvermont.gov/climate](https://healthvermont.gov/climate)

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**From:** Lazorchak, Jane <Jane.Lazorchak@vermont.gov>

**Sent:** Tuesday, July 12, 2022 12:04 PM

**To:** Ulmer, Jared (he/him) <Jared.Ulmer@vermont.gov>; O'Toole, Megan <Megan.OTOole@vermont.gov>; Patrick Field <pfield@cbi.org>

**Cc:** jhinckley@all4inc.com

**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Thank you!

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**From:** Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>  
**Sent:** Monday, July 11, 2022 5:13 PM  
**To:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>; O'Toole, Megan <[Megan.OTOole@vermont.gov](mailto:Megan.OTOole@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>  
**Cc:** [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Hi Jane- sorry for the delay, getting the question about cancer clusters answered is taking much longer, but I do expect to have a reply tomorrow morning. By tomorrow afternoon, I'll send you my update comment response, including some data/findings related to asthma & cancer.

Thanks!  
Jared

**Jared Ulmer, MPH, AICP** (he/him/his)  
Climate & Health Program Manager  
Vermont Department of Health  
108 Cherry Street, Burlington, VT 05402  
802-865-7762  
[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)  
[healthvermont.gov/climate](https://healthvermont.gov/climate)

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**From:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>  
**Sent:** Monday, July 11, 2022 11:59 AM  
**To:** Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>; O'Toole, Megan <[Megan.OTOole@vermont.gov](mailto:Megan.OTOole@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>  
**Cc:** [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Jared,

Would you mind sending me an update so I have it ahead of Wednesday's meeting? Thank you.

Jane

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**From:** Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>  
**Sent:** Wednesday, June 29, 2022 11:35 AM  
**To:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>; O'Toole, Megan <[Megan.OTOole@vermont.gov](mailto:Megan.OTOole@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>  
**Cc:** [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Or if you want to wait, I can revise my response w/ Asthma info (which I just received) and hopefully Cancer info, if I can get a response.

**Jared Ulmer, MPH, AICP** (he/him/his)  
Climate & Health Program Manager  
Vermont Department of Health  
108 Cherry Street, Burlington, VT 05402  
802-865-7762  
[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)  
[healthvermont.gov/climate](http://healthvermont.gov/climate)

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**From:** Ulmer, Jared (he/him)  
**Sent:** Wednesday, June 29, 2022 11:07 AM  
**To:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>; O'Toole, Megan <[Megan.OToole@vermont.gov](mailto:Megan.OToole@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>  
**Cc:** [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Certainly.

**Jared Ulmer, MPH, AICP** (he/him/his)  
Climate & Health Program Manager  
Vermont Department of Health  
108 Cherry Street, Burlington, VT 05402  
802-865-7762  
[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)  
[healthvermont.gov/climate](http://healthvermont.gov/climate)

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**From:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>  
**Sent:** Wednesday, June 29, 2022 11:00 AM  
**To:** Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>; O'Toole, Megan <[Megan.OToole@vermont.gov](mailto:Megan.OToole@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>  
**Cc:** [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Thank you for this. Ok if I pdf and post?

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**From:** Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>  
**Sent:** Wednesday, June 29, 2022 10:52 AM  
**To:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>; O'Toole, Megan <[Megan.OToole@vermont.gov](mailto:Megan.OToole@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>  
**Cc:** [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Hi folks – thanks for inviting me today, and I’m happy to answer additional questions moving forward. I did want to respond to the last-minute comments in case this can be noted in minutes or shared at the next meeting:

1. Health effects associated with McNeil & Ryegate – John can likely elaborate on this with more expertise about these specific facilities, but the bottom line is that based on my available data sources, any health impacts specifically caused by these facilities is so negligible that they’re essentially impossible to detect, and thus impossible to elaborate on in any detail. I focused largely on health impacts from residential wood solely because our data indicate that residential wood combustion is associated with measurable health effects, whereas emissions from the two biomass power stations simply is not. This is mainly a result of the two generating facilities operating with very efficient combustion technology and with extensive filtration, pollution controls, and regulations that in combination greatly limit emissions. In contrast, residential wood burning occurs at a comparatively inefficient scale with minimal pollution controls, where emissions vary widely based on stove characteristics, fuel characteristics, and stove usage behaviors.
  - a. That said – I will ask around for data to try to answer the questions about asthma & cancer risk near McNeil & Ryegate. We typically do not have ready access to data any smaller than the county level, so it may not be possible to answer a question that requires more geographic precision.
2. Comparing wood versus oil/gas as a heating fuel – I indicated that particulate emissions are much worse from wood combustion as compared to oil/gas, and overall, there are much greater health impacts associated with outdoor air pollution from residential wood combustion as compared to health impacts associated with outdoor air pollution from residential oil/gas combustion. While I hope health impacts associated with outdoor air pollution are an important consideration, I do want to point out that there are many other impacts (health, economic, environment, climate change and its secondary impacts on those areas) that presumably should also be considered and weighed. Burning any fuel will have many different pros and cons on different time scales. My presentation was primarily focused on comparing near-term health impacts associated with air pollution from different home heating fuels and equipment.

Hope that’s helpful, and I can follow-back up if I learn anything more about specific health impacts near McNeil & Ryegate.

Best,  
Jared

**Jared Ulmer, MPH, AICP** (he/him/his)  
Climate & Health Program Manager  
Vermont Department of Health  
108 Cherry Street, Burlington, VT 05402  
802-865-7762  
[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)  
[healthvermont.gov/climate](http://healthvermont.gov/climate)

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**From:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>  
**Sent:** Wednesday, June 29, 2022 8:30 AM  
**To:** Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>; Miller, Liz <[Liz.Miller@partner.vermont.gov](mailto:Liz.Miller@partner.vermont.gov)>; 'Miller, Liz' <[Liz.Miller@greenmountainpower.com](mailto:Liz.Miller@greenmountainpower.com)>; Poor, TJ <[TJ.Poor@vermont.gov](mailto:TJ.Poor@vermont.gov)>; O'Toole, Megan <[Megan.OTOole@vermont.gov](mailto:Megan.OTOole@vermont.gov)>; Richard Hopkins <[hopkinsrs@comcast.net](mailto:hopkinsrs@comcast.net)>; Dow, Judy <[Judy.Dow@partner.vermont.gov](mailto:Judy.Dow@partner.vermont.gov)>; Hancock, Charlie <[Charlie.Hancock@vermont.gov](mailto:Charlie.Hancock@vermont.gov)>; Charlie Hancock <[northwoodsforestry@gmail.com](mailto:northwoodsforestry@gmail.com)>; Coster, Billy <[Billy.Coster@vermont.gov](mailto:Billy.Coster@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>; Adam Sherman <[asherman@veic.org](mailto:asherman@veic.org)>; Wolz, Marian <[Marian.Wolz@vermont.gov](mailto:Marian.Wolz@vermont.gov)>  
**Cc:** Smythe, Collin <[Collin.Smythe@vermont.gov](mailto:Collin.Smythe@vermont.gov)>; Whiting, Chase <[Chase.Whiting@partner.vermont.gov](mailto:Chase.Whiting@partner.vermont.gov)>; cwhiting <[cwhiting@clf.org](mailto:cwhiting@clf.org)>; [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Thank you! I will post as we get going.

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**From:** Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>  
**Sent:** Wednesday, June 29, 2022 8:22 AM  
**To:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>; Miller, Liz <[Liz.Miller@partner.vermont.gov](mailto:Liz.Miller@partner.vermont.gov)>; 'Miller, Liz' <[Liz.Miller@greenmountainpower.com](mailto:Liz.Miller@greenmountainpower.com)>; Poor, TJ <[TJ.Poor@vermont.gov](mailto:TJ.Poor@vermont.gov)>; O'Toole, Megan <[Megan.OTOole@vermont.gov](mailto:Megan.OTOole@vermont.gov)>; Richard Hopkins <[hopkinsrs@comcast.net](mailto:hopkinsrs@comcast.net)>; Dow, Judy <[Judy.Dow@partner.vermont.gov](mailto:Judy.Dow@partner.vermont.gov)>; Hancock, Charlie <[Charlie.Hancock@vermont.gov](mailto:Charlie.Hancock@vermont.gov)>; Charlie Hancock <[northwoodsforestry@gmail.com](mailto:northwoodsforestry@gmail.com)>; Coster, Billy <[Billy.Coster@vermont.gov](mailto:Billy.Coster@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>; Adam Sherman <[asherman@veic.org](mailto:asherman@veic.org)>; Wolz, Marian <[Marian.Wolz@vermont.gov](mailto:Marian.Wolz@vermont.gov)>  
**Cc:** Smythe, Collin <[Collin.Smythe@vermont.gov](mailto:Collin.Smythe@vermont.gov)>; Whiting, Chase <[Chase.Whiting@partner.vermont.gov](mailto:Chase.Whiting@partner.vermont.gov)>; cwhiting <[cwhiting@clf.org](mailto:cwhiting@clf.org)>; [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** RE: Biomass Task Group - Tomorrow's Meeting

Here you go!

Talk to you soon,  
Jared

**Jared Ulmer, MPH, AICP** (he/him/his)  
Climate & Health Program Manager  
Vermont Department of Health  
108 Cherry Street, Burlington, VT 05402  
802-865-7762  
[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)  
[healthvermont.gov/climate](http://healthvermont.gov/climate)

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**From:** Lazorchak, Jane <[Jane.Lazorchak@vermont.gov](mailto:Jane.Lazorchak@vermont.gov)>  
**Sent:** Tuesday, June 28, 2022 4:10 PM

**To:** Miller, Liz <[Liz.Miller@partner.vermont.gov](mailto:Liz.Miller@partner.vermont.gov)>; 'Miller, Liz' <[Liz.Miller@greenmountainpower.com](mailto:Liz.Miller@greenmountainpower.com)>; Poor, TJ <[TJ.Poor@vermont.gov](mailto:TJ.Poor@vermont.gov)>; O'Toole, Megan <[Megan.OTOole@vermont.gov](mailto:Megan.OTOole@vermont.gov)>; Richard Hopkins <[hopkinsrs@comcast.net](mailto:hopkinsrs@comcast.net)>; Dow, Judy <[Judy.Dow@partner.vermont.gov](mailto:Judy.Dow@partner.vermont.gov)>; Hancock, Charlie <[Charlie.Hancock@vermont.gov](mailto:Charlie.Hancock@vermont.gov)>; Charlie Hancock <[northwoodsforestry@gmail.com](mailto:northwoodsforestry@gmail.com)>; Coster, Billy <[Billy.Coster@vermont.gov](mailto:Billy.Coster@vermont.gov)>; Patrick Field <[pfield@cbi.org](mailto:pfield@cbi.org)>; Adam Sherman <[asherman@veic.org](mailto:asherman@veic.org)>; Wolz, Marian <[Marian.Wolz@vermont.gov](mailto:Marian.Wolz@vermont.gov)>  
**Cc:** Smythe, Collin <[Collin.Smythe@vermont.gov](mailto:Collin.Smythe@vermont.gov)>; Whiting, Chase <[Chase.Whiting@partner.vermont.gov](mailto:Chase.Whiting@partner.vermont.gov)>; cwhiting <[cwhiting@clf.org](mailto:cwhiting@clf.org)>; Ulmer, Jared (he/him) <[Jared.Ulmer@vermont.gov](mailto:Jared.Ulmer@vermont.gov)>; [jhinckley@all4inc.com](mailto:jhinckley@all4inc.com)  
**Subject:** Biomass Task Group - Tomorrow's Meeting

Afternoon All,

My apologies for the late delivery of tomorrow morning's biomass task group agenda! I am still digging out from vacation but look forward to seeing you and our invited guests tomorrow morning at 8:30.

Jared/John – please see the attached for your specific time to present. If you have materials that you plan to share, please respond to this email to include them. I will post them to our website as well for the public to access. We appreciate you joining and sharing your expertise with us!

See you all tomorrow at 8:30.

Best,  
Jane



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**Jane Lazorchak (she/her)** | Director of Global Warming Solutions Act  
Vermont Agency of Natural Resources  
Davis 2, 1 National Life Drive, Montpelier, VT 05602  
802-505-0561  
[anr.vermont.gov](http://anr.vermont.gov)