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SENT VIA FED EX AND EMAIL

December 21, 2023

Michael S. Regan
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Re: Make Sunsets Inc. Engaging in Solar Geoengineering – Follow Up

Dear Mr. Regan and Mr. Goffman:

We write again on behalf of our client, Informed Consent Action Network (“**ICAN**”), regarding your response letter dated December 8, 2023 (“**Letter**”), wherein you confirmed “[t]he release of sulfur dioxide or other sulfur compounds into the stratosphere is a form of stratospheric aerosol injection (SAI), often referred to as geoengineering.” Thank you for your prompt response regarding our concerns that Make Sunsets Inc. (“**Make Sunsets**”) is launching balloons filled with sulfur dioxide,¹ an EPA criteria pollutant,² into the air. However, the Letter failed to state Environmental Protection Agency’s (“**EPA**”) position regarding the matter.

We write again to ask the EPA to review and address the activities of Make Sunsets as they are actively engaging in solar geoengineering (“SG”) or stratospheric aerosol injection (“SAI”) according to the definition provided in your Letter and in violation of the recommendations and guidelines of the White House Office of Science and Technology Policy (“OSTP”) and the Environmental Protection Agency (“EPA”).

Therefore, since the EPA is aware of Make Sunsets’ SG activities, please respond and state whether the EPA condones private companies, such as Make Sunsets, engaging in SG.

A. Make Sunsets is Defying the Recommendations and Guidelines of the White House OSTP’s Solar Radiation Modification Research Plan.

According to the OSTP’s Congressionally Mandated Research Plan on Solar Radiation Modification (“**Research Plan**”) cited in your Letter, **SAI and SG should be researched, not deployed**. This conclusion also aligns with the 2021 National Academies of Sciences, Engineering, and Medicine (“**NASEM**”) report, Reflecting Sunlight: Recommendations for SG Research and

¹ <https://makesunsets.com/>.

² <https://www.epa.gov/so2-pollution>.

Research Governance (“**Report**”) which concluded SG research is only in the early stages³ and additional research is needed regarding the possible benefits and potentially catastrophic effects that SG may have on weather, agriculture, natural ecosystems, and human health.⁴ Both the Research Plan and Report conclude SG should not be deployed at this time and additional research is necessary to determine whether SG or SAI should be deployed in the future.

As you are aware, Make Sunsets is deploying balloons filled with harmful sulfur dioxide into the stratosphere, bypassing the recommended research prerequisites for deployment, and defying the recommendations and guidelines set by the Report and the Research Plan to which you cite. As stated in your Letter, the EPA contributed to and must follow the Research Plan put forth by the OSTP.

Please respond and explain whether the EPA’s apparent inaction concerning Make Sunsets aligns with the Research Plan and whether the EPA should permit a company to deploy SG by launching sulfur dioxide-filled balloons into our atmosphere.

B. SAI and SG Should Not Be Deployed Without the Informed Consent of the Public.

According to the Report, the informed consent of the public should be obtained before SG is deployed. Informed consent requires meaningful public input and participation into the inquiry of whether SG technologies should be deployed.⁵

According to Marcia McNutt, president of NASEM, “given the urgency of the climate crisis, solar geoengineering needs to be studied further. But just as with advances in fields such as artificial intelligence or gene editing, science needs to **engage the public to ask not just can we, but should we?**”⁶ This sentiment is echoed by Chris Field, the chair of the committee which authored the Report, who stated “**the U.S. solar geoengineering research program should be all about helping society make more informed decisions.**”⁷

Please respond as to whether EPA has, or will, hold public meetings to inform citizens about Make Sunsets and to receive public input and consent to their SG activities. Absent such public hearings, the EPA is allowing Make Sunsets to experiment on our planet and our people without our consent.

³ <https://nap.nationalacademies.org/read/25762/chapter/4#90>.

⁴ <https://nap.nationalacademies.org/read/25762/chapter/1>.

⁵ <https://nap.nationalacademies.org/read/25762/chapter/7#167>.

⁶ *Id* (emphasis added).

⁷ *Id* (emphasis added).

C. SAI and SG Should Not Be Deployed Without Substantial Governance and Oversight.

Further, according to the Report, there should be no deployment of SG without substantial governance and oversight.⁸ The Report, which is reticent to recommend even small-scale and controlled outdoor experimentation of SG, provides that any outdoor SG experimentation should be well regulated, subject to appropriate governance, including permitting and impact assessments.⁹ Notably, Recommendation 6.2 of the Report states as follows:

Deliberate outdoor experiments that involve releasing substances into the atmosphere should be considered only when they can provide critical observations not already available and not likely to become available through laboratory studies, modeling, and experiments of opportunity (e.g., observing volcanic eruptions, rocket plumes, or ship tracks).¹⁰

In May 2023, Harvard University Professor Peter Frumhoff explained how Make Sunsets' deployments directly contradict Recommendation 6.2 of the Report. Mr. Frumhoff, who serves on the Board of Atmospheric Sciences and Climate at NAESM, and contributed to the Report, participated on a panel at the SXSW Conference called "What if Someone Tries to Re-Engineer the Climate?" The panel, which included Katharine Ricke of Scripps Institution of Oceanography and School of Global Policy and Strategy at UC San Diego, who also contributed to the Report, discussed and criticized the activities of Make Sunsets. Mr. Frumhoff stated the following during that discussion:

We need to have [SG] research and my own personal view is **that needs to include some small-scale outdoor experiments – not the provocative, non-scientific versions of them like Make Sunsets...** but meaningful experiments, ones that can on a very small scale help us understand how to improve models.

Moreover, the Research Plan echoes the above sentiments from the Report and provides a governance framework for research, not deployment, of SG. **The Research Plan "should not be interpreted as endorsement of implementation of SRM [solar radiation management, a form of SG]."**¹¹ It acknowledges that, "deployment of SRM would inevitably involve its own risks, almost all of which are poorly understood and some of which are unknown."¹² It also states that "any program of research into SRM would be characterized by transparency, oversight, safety,

⁸ <https://www.nationalacademies.org/news/2021/03/new-report-says-u-s-should-cautiously-pursue-solar-geoengineering-research-to-better-understand-options-for-responding-to-climate-change-risks>.

⁹ <https://www.nationalacademies.org/news/2021/03/new-report-says-u-s-should-cautiously-pursue-solar-geoengineering-research-to-better-understand-options-for-responding-to-climate-change-risks>.

¹⁰ <https://nap.nationalacademies.org/read/25762/chapter/8#248>.

¹¹ <https://www.whitehouse.gov/wp-content/uploads/2023/06/Congressionally-Mandated-Report-on-Solar-Radiation-Modification.pdf>.


¹² *Id.*

public consultation, international cooperation, and periodic review, as outlined in a research governance framework.”¹³

Please (1) advise how the EPA is monitoring and providing necessary government oversight of Make Sunsets’ SG activities and the impact they may have on human health and our environment; and (2) explain how the EPA is ensuring Make Sunsets is complying with the EPA’s standards, rules, and programs established to limit sulfur dioxide and its harmful effects on human health and the environment.

We look forward to receipt of a follow-up letter from you which directly addresses each of the above concerns.

Sincerely,



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¹³ *Id.*