PRIVILEGED AND CONFIDENTIAL
ATTORNEY WORK PRODUCT
DRAFT

November 15, 2017

Dr. David Keith
Gordon McKay Professor of Applied Physics,
School of Engineering and Applied Sciences (SEAS)
Professor of Public Policy, Harvard Kennedy School
Harvard University
Pierce Hall
29 Oxford Street
Cambridge, MA 02138

Re: *Potential compliance issues raised by ScopeX project under U.S. environmental law*.

Dear David:

When we last met in Berlin, you asked me to prepare an informal assessment of potential environmental compliance issues that might arise if Harvard University ("Harvard") proceeded with its proposed ScopeX field demonstration project. This letter provides our initial impressions about the possible legal obligations triggered by the experiment. As you know, this letter does not constitute any formal legal advice or binding opinion; it simply offers the personal perspective from myself and my Climate Change Law class.

According to the latest description of the ScopeX project, we understand that Harvard intends to retain World View Enterprises to loft a weather balloon to an altitude of approximately 20 kilometers. The balloon will float for 36 hours, and it will carry a gondola equipped with sensors and dispersal equipment. The dispersal device will release a small amount of water vapor to create a plume that will reach approximately one kilometer in length and 100 meters in width. In addition to water, future releases of ScopeX may include either calcium carbonate or sulfates. World View Enterprises will release the balloon either from its new facility near Tuscon, Arizona, or from a rural release location in Page, Arizona. The launch will proceed under an existing Federal Aviation Administration permit issued to World View Enterprises for aeronautic balloon launches into lower stratospheric altitudes.

A few additional facts are relevant to our analysis. As we understand it, the ScopeX demonstration will release up to one kilogram of material into the air, and the released chemicals will not pose any significant toxicity or hazard to people or the environment. The state of Arizona will not participate or authorize this experiment in any fashion, and the sole source of funding for the project will come from Harvard University's private endowment funds. And we understand that Harvard may choose to seek approval of the project's design from an advisory board consisting of experts from multiple fields that it selects, but that it will agree in advance to bind itself to the advisory board's conclusions or recommendations.

I. Applicable U.S. environmental laws and regulations.

As you know, the United States has no federal or state laws that directly and expressly govern climate engineering, solar radiation management, or carbon dioxide removal activities. As a result, the most likely regulatory challenges for the ScopeX project will arise from attempts to…

A. ESA 16 U.S.C.A. § 1536(a)(2) - agency action will not "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat." (FAA permit would be the agency action)...(a)(3) - In the process of authorizing a permit a federal agency must consult with the Secretary of Commerce if the permit applicant has reason to believe that an endangered species "may be present" in the project area.
B. Clean Air Act, Title I
C. Clean Air Act, Title VI
D. National Environmental Policy Act 40 CFR § 1508(18) -

.

II. Potential federal non-environmental statutory requirements.

Drones. - but arizona law prohibits local regulation of drone flights. Unmanned

III. Suggested strategies to minimize legal risk or undesirable delays.

Volunteer for environmental impact statement

Thank you again for the opportunity to work on this exciting and important project. As always, please let us know if you have any additional questions or need further information. At the least, I look forward to discussing these options with you at the Gordon Research conference next year.
\

Best wishes,

Tracy Hester