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S T A T E O F R H O D E I S L A N D

IN GENERAL ASSEMBLY

JANUARY SESSION, A.D. 2021

A N A C T

RELATING TO HEALTH AND SAFETY -- THE GEOENGINEERING - HAZARDOUS EMISSIONS ACT

Introduced By: Senators Kallman, Acosta, and DiMario

Date Introduced: March 11, 2021

Referred To: Senate Environment & Agriculture

It is enacted by the General Assembly as follows:

SECTION 1. Title 23 of the General Laws entitled "HEALTH AND SAFETY" is hereby amended by adding thereto the following chapter:

CHAPTER 23.8

THE GEOENGINEERING - HAZARDOUS EMISSIONS ACT

23-23.8-1. Short title.

This chapter shall be known and may be cited as "The Geoengineering - Hazardous Emissions Act".

23-23.8-2. Legislative intent and findings.

(a) It is the intent of the general assembly, by enactment of this chapter to preserve the safe, healthful, resilient and peaceful uses of Rhode Island's atmosphere for people, the environment, and agriculture, by regulating geoengineering, weather modification and other atmospheric activities and prohibiting those that are harmful.

(b) "Geoengineering" is defined as the intentional manipulation of the environment, involving nuclear, biological, chemical, electromagnetic and/or other physical-agent activities that effect changes to Earth's atmosphere and/or surface.

(c) The general assembly finds that geoengineering encompasses many technologies and methods involving hazardous activities that can harm human health and safety, the environment, agriculture, property, aviation, state security, and the economy.

(d) According to a 2020 report by the Environment Rhode Island Research & Policy Center, *Trouble in the Air*, "Air pollution is linked to health problems including respiratory illness, heart attack, stroke, cancer and mental health problems."

(e) It is therefore the intention of the general assembly to regulate all geoengineering activities, as further set forth by the terms and provisions of this chapter.

23-23.8-3. Findings of fact.

(a) Background. Earthly life, or "bios", is a system that can be impaired and broken by perturbations such as human activities that are xenobiotic, i.e., foreign to life. The extant damage from pollutants and other harmful human activities is incalculable, and the state of Earth's biotic system is widely reported as catastrophic and in urgent need of protective action.

(b) Scope of geoengineering. Inclusive of solar radiation management (SRM), carbon dioxide removal (CDR), and other techniques, geoengineering activities are diverse, varying greatly in their characteristics and consequences. Geoengineering includes anthropogenic atmospheric activities, and may involve ground-based, under-water, and/or atmosphere-based activities, including, without limitation, aerosol injection, cloud-seeding and other means of deployment by aircraft, rockets, unmanned aerial vehicles (UAVs) and drones of all sizes down to pico, large balloons, wireless infrastructures, ships and/or submarines.

(c) Scope of regulatory authority. All geoengineering activities require state licensing.

(d) SRM activities include, without limitation, aerosol injection such as:

(l) Solar shields or atmospheric sunscreens: reflective materials are injected into the stratosphere with the intention of increasing albedo. These include, without limitation, sulfur dioxide (SO_2), sulfuric acid (H_2SO_4) and aluminum oxide (Al_2O_3):

(i) $S0_2$ and H_2SO_4. Per the journal Geophysical Research Letters, $S0_2$ injected into the atmosphere slowly converts to H2S04 to produce the adverse effects of ozone layer reduction and radiative forcing or heating of the lower stratosphere through reflection and absorption of terrestrial heat. The U.S. Clean Air Act is focused on reducing $S0_2$ and H_2SO_4, the primary components of acid rain. Per the U.S. Environmental Protection Agency (EPA), SO_2 penetrates deeply into sensitive parts of the lungs, causing susceptibility to pathogens, and harms the environment;

(ii) Al_2O_3. Per the U.S. National Institutes of Health (NIH), Al_2O_3 causes respiratory tract, eye, and skin irritation as well as organ damage and bone abnormalities, particularly with repeated or prolonged exposure, and it may be neurotoxic if absorbed into the brain. The U.S. Emergency Planning and Community Right-to-Know Act (EPCRA) § 313 requires anyone manufacturing, processing, or using Al_2O_3 to report this activity to EPA. Any aircraft containing a hazardous substance is considered by the U.S. Comprehensive Environmental Response, Compensation, and

Liability Act (CERCLA) § 103, and by EPCRA § 304 a "facility" required to report any release into the environment. Whether users deploying substances into the atmosphere do presently comply is unlikely. Typically, stratospheric releases of sulfuric and aluminum oxide particulates fall into the troposphere, blocking sunlight from reaching Earth's surface, after which they rain down as acidic pollution, harming terrestrial and aquatic life. Acidic precipitation further mobilizes aluminum from both natural sources and direct, anthropogenic atmospheric releases and industrial processes. Acidification mobilizes aluminum from land into aquatic environments and into human and animal brain tissues. Acid rain dissolves and washes away the nutrients and minerals in the soil which help plants grow, reduces photosynthesis by removing the waxy cover on leaves, and ultimately kills the aquatic life upon which human life depends;

(2) Carbon black or black carbon releases. Deliberate, atmospheric releases of soot are used to produce artificial weather events, increasing albedo and reflecting sunlight; in particular, aerosolized coal combustion fly ash liberates dispersed aluminum, which, when absorbed into human and other bodies, is a primary factor in the pronounced increase in neurological diseases and the widespread debilitation of Earth's biota;

(3) Rocket emissions: Entirely unregulated, these include, without limitation, black carbon soot and alumina particles in addition to carbon monoxide (CO), chlorine, sulfuric compounds, methane, and water vapor, a "greenhouse gas" blocking sunlight and reflecting terrestrial heat;

(4) Cloud brightening: Sodium chloride (NaCl) or sea salt, seawater, nitric acid (HNO_3), and/or other materials injected into clouds make the clouds more reflective, after which the salt and other materials rain out over land areas and contaminate freshwater supplies;

(5) Salt flare rockets: Fired into clouds, these rockets trigger rain downpours containing salt, which contaminates freshwater supplies, desiccates surfaces, and makes the atmosphere and exposed biota, including humans, more conductive;

(6) Cloud-seeding releases of silver iodide (AgI) and/or solid dry ice, which is carbon dioxide (CO_2), the latter increasing carbon levels that are intended rather to be decreased;

(7) Cloud-cover production: Aerial releases of water vapor, a "greenhouse gas", result in manmade cloud cover, trapping terrestrial heat;

(8) Reflective space mesh mirrors: Wire-mesh mirrors deployed in space reduce the amount of direct sunlight reaching Earth's surface over small or large areas, depending on their size;

(9) Space sunshades or sunshields: Huge, parasol-like devices reduce the amount of direct sunlight reaching Earth's surface;

(10) Planetary sunshades: These largest of SRM operations use particulates to cover, over

time, the whole Earth, substantially stripping the ozone layer and reducing the amount of direct sunlight reaching Earth's surface;

(11) Artificial ionosphere: A sustained, high-density plasma cloud is produced in Earth's upper atmosphere; and

(12) Large helium balloons, which release atmospheric contaminants such as SO_2.

(e) CDR, involving the sequestration, capture, and/or removal of carbon dioxide:

(l) Land-based and ocean-based carbon sequestration, also called CO_2 geo-sequestration;

(2) Carbon capture or removal, involving the capture of what is considered "waste" CO_2 and depositing it at storage sites;

(3) Biochar, requiring burning huge amounts of biomass such as trees, crops, and solid waste;

(4) Ocean fertilization (OF) by dumping iron filings, lime, and urea so as to sequester CO_2, producing detrimental artificial algae blooms and reducing oxygen and needed nutrients; and

(5) Genetically modified CO_2-eating, plastic trees;

(f) Additional geoengineering activities requiring state licensing including, without limitation:

(1) Ocean-cooling pipes, which, per recent reports, would rather exacerbate oceanic warming;

(2) Re-icing and/or cooling the Arctic and other areas through artificial means;

(3) Ground-based cloud-nucleating generators;

(4) Weather modification involving the release of sea salt, silver iodide, barium, and/or other substances to enhance precipitation (rain or snow) in one area, while reducing precipitation elsewhere;

(5) Flame-throwing fire drones purposed to cause terrestrial fires;

(6) Glacier-reflecting blanket deployment, with vast polar areas to be covered with soot;

(7) Nitrogen removal and sequestration;

(8) Evaporation alteration, by spreading of various kinds of film upon large bodies of water;

(9) Water vapor generation using nuclear fission or fusion, contaminating water sources;

(10) Chaff releases, which involve the dispersal of bundles of millions of aluminum-coated glass fibers, often in lengths one and five-tenths centimeters (1.5 cm), two and five-tenths centimeters (2.5 cm) and five centimeters (5 cm), which spread over hundreds of miles, remain in the air for up to a day, or for nanochaff, years, and then fall and break apart; while purposed to confuse foreign radars and satellite vision, chaff can causes power outages and interfere with air-traffic control, weather forecasting and climate research;

(11) Deployment of radiofrequency/microwave (RF/MW) radiation, and/or low-frequency electric and/or magnetic fields, other than those needed for safety and aviation communications-by infrastructures, individual and high-densification antennas at the terrestrial surface and/or at higher altitudes from satellites, and/or by other means or at other altitudes; and

(12) Intense mechanical vibration or noise other than from an aircraft's propulsion; and/or other physical agents, such as intentional changes to ambient temperature or barometric pressure, or excessive light at night, for any purpose, or inadvertently from other activities.

(f) Aircraft geoengineering activities include those carried out from or by any type of manned or unmanned aerial vehicle (the latter "UAV"), rocket, drone or balloon, which involve the release or deployment of any nuclear radiation; any biologic or trans-biologic agent; any chemical substance or mixture including any chemical substances added to the aircraft's fuel emissions; cloud seeding; any electromagnetic radiation deployment other than radar or radio communications necessary for the aircraft's safety; or any other harmful physical agent, shall be subject to regulation including the licensing process, pursuant to this chapter.

(g) Consequences. Documented problems arising from geoengineering activities include, without limitation:

(1) Contamination of air, water, and soil, as particulates fall to Earth's surface, and other contamination, including liquids, vapors and physical agents, at or below ground or sea level;

(2) Degradation of human, animal, and plant health and productivity, with early death, when people and other living organisms are exposed to geoengineering particulates, vapors and other types of contaminants, often in violation of the U.S. National Environmental Policy Act of 1970 (NEPA);

(3) The acceleration of biodiversity and species losses, especially the loss of endangered and threatened species as identified under the U.S. Endangered Species Act of 1973 (ESA), each of which species has intrinsic as well as human-resource and resiliency value, and each of which cannot bear, per ESA, further habitat modification or degradation;

(4) Extreme weather, with unprecedented temperatures, fires, floods, wind speeds, electrical storms, hurricanes and tornados, resulting in large-scale loss of life, damaged structures and infrastructures; and severe reduction in state, regional, and global food production;

(5) Changes in micro-climates, local weather, and large-scale climates within short time periods, with increased and cascading climate effects and political ramifications;

(6) Global dimming, which decreases vitamin D (calciferol) in humans and animals, causing malabsorption of calcium, magnesium and phosphate; and which reduces photosynthesis, with losses in agricultural productivity;

(7) Less direct sunlight reaching Earth's surface, with fewer winter freezes and higher humidity, resulting in increased molds, mildews, fungi, and other pathogens and pests that develop from such conditions - with human, animal and plant diseases resulting therefrom;

(8) Increases in acid rain loads from the airborne injection or release of sulfur and aluminum oxide, with human, animal, plant, and water-resource degradation;

(9) Changes in distribution patterns and chemical contents of rainfall, resulting in floods, droughts, and the potential for international political conflicts therefrom;

(10) Algal blooms, with impacts upon human health, aquatic systems, and economies;

(11) The near impossibility of restoring devalued natural resources, with the undermining of state-funded conservation programs;

(12) Increased ultraviolet radiation (UV, including UVA, UVB, and UVC), at Earth's surface: UV is strongly absorbed by organic materials such as living tissues, with UVC's high energy and small wavelength particularly capable of destroying DNA and reproduction

(13) Increased combustibility of Earth's terrestrial surfaces, by means of fallen particulates, some pyrophoric and/or desiccating, with increased incidence of fires;

(14) Significant increases in ambient mechanical vibration and noise pollution, leading to without limitation, increased incidence of nervous system and cardiac irregularities;

(15) Increased metals content in surface-dwelling and aquatic organisms, producing heightened bodily electrical conductivity and radiation absorption, with more susceptibilities and damages; particularly where atmospheric electrical charges are naturally or otherwise intensified;

(16) Extreme harm to vulnerable human subpopulations and to the more vulnerable species;

(17) Significant changes to Earth's atmosphere's electric, magnetic, and electromagnetic properties through the induction of high-intensity, decimeter-, centimeter-, and millimeter-wave microwave radiation, resulting in extreme and less predictable weather, the desiccation of humans, animals, insects and plants; blood-oxygen deprivation in humans and animals; and the reduction and ultimate eradication of animal and insect populations, particularly pollinators, dependent for navigation upon geomagnetism;

(18) Visibility impairment and clutter, reducing aviation safety and accelerating collision rates with satellites, balloons and nearly one million "space-junk" or "space-debris" particles;

(19) RF/MW interference from additional microwave-irradiating satellites with global positioning system (GPS) and other international position systems' signals, relied upon by the aviation industry in traffic separation, aircraft navigation and instrument approaches for landing aircraft; and relied upon by militaries for national security; with the need for more frequent

replacement of GPS equipment, potentially costing the public billions of dollars;

(20) The enabling of the Internet of Bodies (IoB), through which program every human and most animals would contain worn, ingested, inhaled, and/or injected chips of micro to pico size with transmitting antennas, toward complete surveillance and control, with constant biometric data collection and loss of autonomy, under an overarching artificial intelligence.

(21) Vulnerability of communications signals including those for munitions from the potential for solar flare alteration or demolition of space-based solar power systems.

(22) Electrical grid vulnerability to attack through the hackability of the so-called "smart" grid.

(23) Increasing incidence of dementias, learning impairments, cardiovascular and respiratory diseases, diabetes, autoimmunity, birth defects, infertility, cancers, and early death in humans; and increasing impairment, disease, debility and early death likewise in other living beings.

(24) The delay by decades of the ozone layer's potential recovery;

(25) The financial burden that airborne, reflective, metallic particulates such as chaff must be repeatedly replenished by aircraft release, since their atmospheric time is limited;

(26) Further financial burden, since, per the Pacific Northwest National Laboratory, the amount of injected material is much less effective in polluted clouds, requiring the injection of increased amounts of material for cloud-brightening;

(27) Economic losses to various sectors of society and to the state itself, resulting from, without limitation, human health damages, with productivity loss, increased and earlier health-care needs, and heightened suffering for those injured and/or sensitized by prior hazardous exposures; contaminated soils and water supplies, loss of pollinators such as bees, butterflies and birds, lower crop yields, dead and dying forests, loss of habitats, decline of fisheries, rising pollution cleanup costs, and less solar power production from lack of sunlight reaching Earth's surface; and

(28) The potential, and ease, for enemies, foreign and domestic, to cause harm intentionally;

(h) Necessity arising from federal stance:

(1) By shirking duties to protect national and state security, safety, human and environmental health and property, the federal government has acted by various means to cause, suffer, allow, and/or permit harm through geoengineering activities known to and in some cases funded by the U.S. military, thereby establishing, through the Tenth Amendment of the U.S. Constitution, the authority and obligation of the states to override such destructive activities, acts and policies, correct the federal government, cancel plans for hazardous activities involving

atmospheric contaminants such as those released in aerosol injection and by high-densification antennas, and lawfully void contracts and permits pertaining thereto.

(2) In view of these facts, the general assembly declares that geoengineering activities must be strictly regulated by the state through a licensing process, within which an impact response conclusion (IRC) from the department of environmental management (DEM), based on preliminary, detailed impact reports (IRs) from the state's agencies, offices, departments, and programs included in § 23-23.8-7, as well as information gathered in public hearings

23-23.8-4. Definitions.

As used in this chapter:

The following words and phrases shall have the meanings given to them in this section:

(1) "Albedo" means the fraction of incident radiation, such as light and heat, reflected by a natural cloud or by materials injected into the atmosphere.

(2) "Announcement" means the publication on the publicly accessible Internet website of the department of environmental management (DEM) a notification of the receipt of an application from a person seeking to conduct or engage in a geoengineering activity.

(3) "Application" means a submitted, written request by any person seeking to implement, conduct or engage in any form of geoengineering.

(4) "Area" means a portion within the confines of the state or its territorial waters, including the atmosphere above the state.

(5) "Atmospheric contaminant" means any type of aerosol, chaff, biologic and/or trans-biologic agent, genetically modified agent, metal, radioactive material, vapor, particulate down to or less than one nanometer in diameter, and any air pollutant regulated by the state, including without limitation those deemed "unnecessary" pursuant to the general laws, any xenobiotic (foreign-to-life) electromagnetic radiation and fields, mechanical vibration and other physical agents, or any combination of these contaminants.

(6) "Chaff' means aluminum-coated silica glass fibers typically dispersed in bundles containing five million (5,000,000) to one hundred million (100,000,000) inhalable fibers, which fall to the ground.

(7) "Conditions" means any limitations and safeguards to be placed on an applied-for geoengineering activity that is licensed by the director of the DEM.

(8) "Department" means the department of environmental management (DEM).

(9) "Director" means the director of the department of environmental management.

(10) "Geoengineering" means the intentional manipulation of the environment, involving nuclear, biological, transbiological, chemical, electromagnetic and/or other physical-agent

activities that effect changes to Earth's atmosphere and/or surface.

(11) "Hazard" means a substance or physical agent by its nature harmful to living organisms, generally, and/ or to property or another interest of value.

(12) "Impact report" (IR) means the report developed and submitted for publication, following the department's announcement of its reception of a geoengineering application, by each appropriate agency, office, department or program in this state, as identified herein, without limitation, at § 23-23.8-8, assessing specific, actual and potential, short-term and long-term effects upon human and environmental health and safety, aviation safety, agriculture, biodiversity, coastal conservation, endangered species, energy consumption, fish and wildlife, forestry, habitat, river and ocean purity, water resources, wildlife, and the state's security and economy.

(13) "Impact report conclusions" (IRC) means the department's collective conclusions in response to the information-gathering process, based on substantive information in both the impact reports (IRs) submitted by various state agencies et al., and from members of the public.

(14) "License" means a license issued pursuant to this chapter by the director of the DEM to an applicant to engage in a geoengineering activity.

(15) "Long-term effects" means actual and potential geoengineering activity consequences or impacts likely to manifest later than one year following the completion of the activity.

(16) "Person" means any individual, trust, firm, joint stock company, corporation, including a quasi-governmental corporation, partnership, association, syndicate, municipality or state or municipal agency, program, fire district, club, nonprofit agency, commission, university or college in this state, department or agency of the federal government, the state, or any international governances or instrumentality thereof, including foreign, domestic and mercenary armed services, or region within the United States.

(17) "Physical agent" means an agent other than a substance, including, without limitation, radiofrequency I microwave and other electromagnetic radiation and fields, barometric pressure, temperature, gravity, kinetic weaponry, mechanical vibration and sound.

(18) "Post-activity report" (PAR) means the report required to be submitted by the licensee to the department following the completion of a licensed geoengineering activity.

(19) "Radiative forcing" means measures of heat energy coming from the sun and reflected back to space, versus measures of terrestrial heat energy, reflected back to Earth's surface.

(20) "Release" means any activity that results in the issuance of contaminants such as the emitting, transmitting, discharging or injecting of one or more nuclear, biological, trans-biological, chemical, and/or physical agents into the ambient atmosphere, either once, intermittently, or continuously.

(21) "Short-term effects" means actual and potential geoengineering activity consequences or impacts likely to manifest within one year of the completion of the activity.

(22) "Stratosphere" means the region of the upper atmosphere extending upward from the edge of the troposphere to about thirty (30) miles (50 km) above the Earth.

(23) "Troposphere" means the region of the lowest layer of the atmosphere, six (6) miles high in some areas and as much as twelve (12) miles high in others, within which there is a steady drop in temperature with increasing altitude and within which nearly all cloud formations occur and weather conditions manifest.

(24) "Weather modification and control" means changing or controlling, or attempting to change or control, by artificial methods, the natural development of any or all atmospheric cloud forms and precipitation forms which occur in the troposphere.

(25) "Website" means the department's publicly accessible Internet website.

23-23.8-5. Policy: rules and regulations.

(a) Procedure.

(1) Application. Due to the potential for significant harm, any contemplated geoengineering activity requires the submission of a written application to request a license to engage in a specific type of geoengineering activity to begin on a specified date during a period of time not to exceed five (5) days.

(2) Evaluation. The department shall carry out an extensive public evaluation process of any geoengineering application, as specified herein.

(3) Decision. Following the evaluation process, the director shall have the power to:

(i) Grant or deny a license;

(ii) Modify the conditions of a license; and

(iii) Revoke a license for cause.

The director shall issue publicly a decision to grant, deny, or conditionally grant, a license.

(4) Licensing. To obtain a license pursuant to the provisions of this section, an applicant must have shown proof of environmental health and safety and that the applied-for activity will produce zero hazardous emissions. If a license is granted, it is drafted as a contract only between the department and the licensee, and may be modified after an additional brief evaluation process, or revoked for cause.

(5) Compliance. The department shall refer potential violations as reported by state agencies or members of the public to the environmental police.

(6) Administration of Funds. The department shall set up a state trust fund for the collection of application fees and violation fines, into which fund the director shall deposit themonies. The

director shall then allocate funds in support of Rhode Island's health and environment, as instructed by legislative amendment to this chapter.

(b) Regulatory authorities. The department is authorized to, and shall, promulgate regulations to implement this act, including, without limitation, the following:

(1) Placing submitted geoengineering applications, evaluative materials, decisions and licensing upon the website.

(2) Soliciting and obtaining impact reports (IRs), holding hearings and providing a comment period, composing and revising impact report conclusions (IRC), and evaluating the applicant's report (AR) in response to evaluative processes, as detailed herein.

(3) Granting or denying licensing in response to applications submitted under this section, which applications shall be decided on a case-by-case basis.

(4) Determining when violations have occurred and referring them to compliance authorities.

(5) Setting up and administering a trust fund to collect application fees and violation fines.

23-23.8-6. License application.

(a) Process. The department shall promulgate a written application to conduct geoengineering activities in Rhode Island. A person seeking to implement, conduct or engage in any form of geoengineering within or above any area of the state shall submit to the director the written or electronic application for a license with proposed GPS and altitude locations for the activity, start date and an end date of no later than five (5) days from the start date, and a fee of one thousand dollars ($1,000).

(b) Application document. The application promulgated under subsection (a) of this section shall require the following information as well as other information, as required by the director:

(1) A detailed description of the contemplated activity, including the purposes, scope, methods, materials, equipment, devices, physical agents and timing of activity in the five (5) day period specified in subsection (a) of this section.

(2) The following, which shall be included in the materials and physical agents requirement under subsection (1) of this section:

(i) Sources, sizes, amounts and concentrations of all materials and the precise chemical formulas of any substance or mixture to be used in the activity;

(ii) The resulting product during and following deployment of a substance or mixture listed under subsection (i) of this section;

(iii) The biological and/or transbiological materials used in the activity, along with any potential interactions of the materials and physical agents such as electromagnetism during and

following deployment; and

(iv) The source equipment, such as tanks, hoses, dispersal jets, and ionizers; generating equipment for various frequencies, modulation characteristics and rates, intensities and concentrations, directionalities, reflection and duration specifications of any type of electromagnetism or other physical agent to be deployed or potentially released, intentionally or inadvertently, during the activity.

(3) Proof of safety to life and property, including human and environmental health, during and following the activity, with substantiating evidentiary documents from independent sources.

(4) The names, educational and professional backgrounds and qualifications of all individuals to be involved in the activity, along with all prior employment and business ownerships.

(5) Background check. The department shall require a criminal background check from each individual participant in a potential geoengineering activity.

(6) Vehicle identification. The name and number of any aircraft or other vehicle that may be used for the activity.

(7) Fee. The application process requires that a one thousand dollar ($1,000) fee be paid into a public trust which shall be set up by the director for the purpose of this chapter.

(8) An electronic copy of the application.

(c) Publication of application. The director shall acknowledge receipt of the application to the applicant within one business day of receipt, shall place the application on its website and shall notice to the following and others who may express interest in receiving notice:

(1) Rhode Island department of health;

(2) Disability Rights Rhode Island (DRRI);

(3) Division of agriculture within the DEM;

(4) Office of air resources within the DEM;

(5) Office of water resources within the DEM;

(6) Rhode Island water resources board;

(7) Rhode Island coastal resources management council;

(8) University of Rhode Island coastal institute;

(9) Rhode Island office of energy resources;

(10) Rhode Island soil and conservation office;

(11) Rhode Island state conservation committee;

(12) Rhode Island state parks & recreation;

(13) Rhode Island division of fish and wildlife outdoor education;

(14) Rhode Island Fishermans Alliance;

(15) Rhode Island Farm Bureau;

(16) Rhode Island Dairy Farms Cooperative:

(17) Rhode Island Beekeepers Association;

(18) Rhode Island Audubon Society;

(19) Rhode Island Wild Plant Society:

(20) Land Conservancy of North Kingstown

(21) Rhode Island airport corporation;

23-23.8-7. Application evaluation.

(a) Impact reports. An applied-for geoengineering activity must first be evaluated by the department and the applicable agencies, offices, departments and programs in this state, which shall produce, under the instruction of the director, their respective impact reports (IRs) from out of their respective subject areas:

(1) The planned methods of release, dispersal, or other deployment of substances or physical agents into the environment including the atmosphere;

(2) Potential impacts of reduction of or increases in sunlight reaching Earth's surface;

(3) The anticipated radiative forcing or heat, if any, reflected to Earth's surface and to space;

(4) The potential and actual, direct and indirect effects upon humans and other living organisms, populations, ecosystems, agriculture, property, aviation and the state's security and economy;

(5) Transboundary effects;

(6) Each of the above matters indicated in short- and long-term effects categories.

(7) Start-and end-date conflicts, if any, within the state.

(b) Recommendation. Each IR shall include a recommendation to allow, disallow, or to allow in a qualified way with conditions the applied-for activity.

(c) Impact report publication. Within three (3) weeks of application submission, or other standardized period as determined by the director, the department shall publish on the website all IRs, citing all actual and potential impacts of the applied-for activity, both short-term and long-term, defined respectively within and beyond one year from completion of the activity.

(d) Hearing notice. The department shall at once publish on its website dates of two (2) public hearings with a comment period on the applied-for activity, noting in said publication the importance of potential contributors' provisions of substantive information, of facts and laws, with supportive written evidence.

(e) Public participation. The department shall seek public comment and testimony for any applied-for activity for which an applicant has submitted an application under this section. Invited

testimony shall include, without limitation, comments of the following individuals and their communities, as locatable through advocacy organizations and more:

(1) Persons with disabilities and those with health conditions that may be affected by geoengineering activities, generally;

(2) Medical and public health science professionals;

(3) Other experts including without limitation health and environmental science, agriculture, astronomy, aviation, coastal, conservation, ecology, economy, fishing, forestry, meteorology, oceanography, wildlife, and security professionals; and

(4) Other interested individuals and organizations such as those in § 23-28.3-6(c), which might ask the department to provide notice when receiving geoengineering applications.

(f) Hearings. The department shall hold two (2) hearings separated by a period of two (2) weeks and over a total commentary period of five (5) weeks from the first hearing, or other periods as shall be determined by the director, for the purpose of collecting further substantive information.

(g) Impact report conclusions. Following the close of the commentary period, in response to the above hearings and received information the department shall within three (3) weeks or a reasonable period to be promulgated by the director, draft its impact report conclusions (IRC) summarizing the content collected in the above IRs and public processes, citing the collected safety, environmental health, economic, and other impacts of the applied-for geoengineering activity, tentatively recommending the granting or denying of the license, and publish the IRC on the website;

(h) Agency and public response. The director shall supplement the IRC by adding any new, pertinent information received by the department, and shall connect any misinformation and make precise any vague statement in the draft IRC.

(i) Final IRC. Within ten (10) days, the department shall complete revision of the draft IRC land publish its final IRC with recommendation to grant, deny, or grant in a qualified way the applied-for activity .

(j) Applicant response. The applicant then shall have ten (10) days to respond to the final IRC, to substantiate comprehensively any disagreement with the IRC, IR and/or public comments; and to prove health and safety in a written application response (AR).

(k) Publication of applicant's response. Within one business day of receipt, the department shall publish the AR on its website.

23-23.8-8. Decision making.

(a) Decision publication. Within ten (10) days or a reasonable period to be promulgated by the director, the director shall announce on the website the final decision whether to grant, deny, or

grant with stated conditions, the applied-for geoengineering activity license.

(b) Criteria. The department shall weight more heavily in the IRC, bodily security, health, environmental and agricultural protection than economic interests.

(1) The department shall include in the IRC, prepared under this subsection, the factual and legal information presented at any pertinent hearings held by the department, recognizing, without limitation, the U.S. constitution's ninth amendment protection of individual rights to privacy and freedom from assault in one's home and body, as superseding both any federal impositions and Tenth Amendment states' rights.

(2) Since, under the Universal Declaration of Human Rights, to which the United States is a signatory, "Everyone has the right to life, liberty and security of person" (Article 3), those harmed or more likely to be harmed bodily by way of geoengineering activities have a greater right than do stakeholders with monetary interests, and this bodily right shall be weighted by the department more heavily than financial interest in geoengineering decisions.

(3) Further, the federal Americans with Disabilities Act provides that persons with disabilities be able to participate in society without being harmed.

(4) The federal Fair Housing Act allows persons with disabilities dwellings that are accessible, i.e., free of harm, including from exogenous circumstances such as potentially hazardous geoengineering activities.

(5) Since geoengineering activities carried out even at extremely high altitudes may result in serious terrestrial consequences in communities and even within homes and bodies, persons with disabilities who are more susceptible to harm by way of prior injuries, exposures, impairments, illnesses, or other reasons, have weightier stakeholder status under this section.

(c) Denial. The department shall deny an application if any of the following is true:

(1) An applicable impact report (IR) substantively recommends that the applied-for activity be disallowed;

(2) An applicant has not disproven the validity of evidence submitted under this chapter that the applied-for activity is harmful.

(d) Draft license. If licensing the activity, the director shall, within ten (10) days or a reasonable period to be promulgated, draft a license agreement including any conditions limiting the activity and any and all follow-up requirements of the applicant post-activity.

(e) License status. A license is a contract between the department and the licensee only, and also a public document from which any signatures shall be redacted prior to publication on the department's website.

(f) Agreement. Upon granting a license pursuant to the provisions of this chapter, the

director shall provide the applicant an agreement potentially to be executed, which shall include:

(1) A detailed report of the department's limitations and safeguards placed upon the activity,

(2) Details to be submitted to the department by the licensee after completion of the activity in its post-activity report (PAR), along with the steps to be taken to track effects and ensure prompt public disclosure of any observations and objections.

(g) Insurance and bonding. Where a license is to be granted, the potential licensee must provide proof of insurance and bonding for the specific activity at least three (3) weeks prior to the activity start date, else the license is void, in which case the director shall immediately notice the applicant of void and revoked status, and place such notice on the website.

(h) Application fee. The director shall ensure that the applicant's fee has cleared.

(i) Confirmation. A licensee must confirm in writing to the department at least two (2) weeks in advance of the start date its intent to carry out the activity on the licensed start date.

(j) Delay. Should the applicant wish to delay the start date, a request and reasons for the proposed modification must be submitted to the department, and shall be deliberated publicly during a ten (10) day period to ensure that the new, proposed date does not conflict with state or other activities; after which time the director shall issue a decision to modify or not modify the license as requested.

(k) Specific Activity. A license must not be used for any activity other than that specified in the license.

(l) Agreement. Upon granting a license under this chapter, the director shall provide the applicant an agreement potentially to be executed, which shall require the following:

(1) A detailed report of the department's limitations and safeguards placed upon the activity.

(2) A detailed report to be submitted to the department by the licensee after completion of the activity, along with the steps to be taken to track effects and ensure prompt public disclosure of any observations and objections.

(3) Proof of bonding and insurance for the activity and indication of understanding of the potential for adverse consequences if the terms and conditions are violated or not fulfilled.

(m) Post-activity report. Following the activity, a licensee must file a post-activity report (PAR), including the hour and minute, along with actual GPS location and altitude, that each aspect of the activity was carried out.

(n) Execution of the agreement. The director shall execute the agreement under subsection (l) and issue the license to the applicant if the director finds the applicant's bonding and insurance

and other required information to be accurate and comprehensive.

(o) Appeal. A person aggrieved by a decision of the director may, within ten (10) calendar days, appeal a decision in accordance with chapter 35 of title 42.

23-23.8-9. Compliance.

(a) Unlicensed activity. The director shall immediately issue a cease-and-desist order upon the discovery of ongoing geoengineering activity, where an agency, department, office or program or member of the public produces evidence to the department that the activity is harmful or involves a hazardous emission; and

(b) The cease-and-desist order under subsection (a) of this section shall have the authority of a court order, and any violation shall be punished under law.

(c) Federally approved programs. Where a geoengineering activity or public process for a geoengineering activity that the department has deemed hazardous has been approved, explicitly or implicitly, by the federal government, the department shall issue a notice to the appropriate federal authority that the hazardous activity cannot lawfully be carried out within or over the state of Rhode Island, pursuant to the Tenth Amendment to the Constitution of the United States.

(d) International programs. An international body that funds in part or in whole or engages in a geoengineering activity deemed to be hazardous by the department shall be prohibited in perpetuity from both engaging in and applying to engage in geoengineering activities in or above the state of Rhode Island.

23-23.8-10. Penalties and enforcement.

(a) Noncompliance. An unlicensed person who engages in a geoengineering activity requiring a license under this chapter or who fails to comply with the decision of the director, or any person who uses an unmarked or unidentified aircraft or other vehicle to carry out a geoengineering activity:

(1) Has committed a felony of the third degree and shall pay a fine of not less than $500,000 or be imprisoned for not less than two (2) years, or both;

(2) Shall be guilty of a separate offense for each day during which violative activity has been conducted, repeated or continued; and

(3) Shall be deemed in violation, and subject to the penalties of § 23-23-14.

(b) Public announcement for enforcement. The department shall post advertisements in newspapers of general circulation and on the department's publicly accessible Internet website to encourage the public to monitor, measure, document and report present, potential and past incidents that may constitute geoengineering activity.

(c) Reporting. An agency or individual who presents evidence of geoengineering activity

under subsection (b) of this section shall email or otherwise write and send the following to the DEM or to any state public official any of the following:

(1) Evidentiary photographs, each separately titled as an electronic or hard-copy document, with the respective location from which, and, if the content is from other than a measuring device, the direction in which, the photo was taken, with its time and date; and

(2) Collected samples with photographs, lab tests, microscopy, spectrometry, and other forms of evidence shall similarly be submitted in writing to the DEM or to any state office, or any state public official.

(d) Official response. A public official who has received information under subsection (b) of this section and has reason to suspect violative activity based on evidence presented by an agency or individual under subsection (c) of this section must, directly or through a designee, report in writing within twenty-four (24) hours all documentary and supportive evidence to the DEM for enforcement.

(e) Reports involving physical agents.

(1) A report to the DEM of excessive electromagnetic radiation or fields in any part of the spectrum, including light and ionizing radiation, or of intense mechanical vibration, noise, or other physical agent, with evidence, including possible photographs or audio recordings, measurements of the agent(s), and/or other detection, shall trigger immediately for attention within two (2) hours a state agency's emergency measurements of peaks and averages over time with the appropriate, calibrated meter and forensic detection device(s) both at and near the reported location.

(2) Radiofrequency/microwave radiation measured at and near the reported location by any state employee at peak in excess of ten microwatts per meter squared (10 mW/m^2), or transmission from a wireless communications facility with an effective radiated power (ERP) in excess of one-tenth watt (0.1W), given the 1934 Communications Act requirement, at 47 U.S.C. § 324 ch.652, Title III, 48 Stat. I 091, of minimal necessary radiation signal power and the 1996 Telecommunications Act's conference report and preemption at 47 U.S.C. §332 (c)(7)(B)(iv), leaving operations of such facilities within the regulatory authorities of state and local officials; or extreme low-frequency AC electric fields in excess of one volt per meter (1V/m) or magnetic fields in excess of one milliGauss (1 mG); or added transients in the electrical wiring, also called "dirty electricity", which must be filtered; or ionizing radiation in excess of two-hundreths milliSievert per hour (0.02 mSv/h); or any vibration, noise or other physical agent exceeding other official limits, guidelines or standards, shall trigger:

(i) The department's immediate communication of the requirement of the owner of each tower, antenna, other wireless facility, or infrastructure deploying excessively energy-demanding

transmissions, or other source of energy at or near the reported location, to produce records of all data collection on the extant operators at one or more sites near where excessive xenobiotic electromagnetism and fields, mechanical vibration, or other physical agents are or have been detected; and

(ii) The department's immediate communication of the requirement of the owner and/or operator of the facility, utility or other service at or near the reported location to provide within one business day all data collection records up to that date and time of electrical usage at or near the reported location; and

(iii) The department's order to cease operations of all antennas on the measured structure other than those needed for police, fire, emergency services and aviation safety; and

(iv) The department's evaluation within twenty-four (24) hours, of the owner's performance in causing the cessation of all operations except those activities exempted under the provisions of this chapter.

(f) Rules and regulations.

The director shall promulgate rules and regulations to implement the provisions of this chapter.

23-23.8-11. Proof of safety.

(a) Applicants for geoengineering licensing must include proof of safety to life and property, and human and environmental health, and pay a one thousand dollar ($1,000) application fee which the DEM shall place into a state trust fund set up for fees and fines.

(b) Following the public hearing process detailed herein, if an applicant is granted a license agreement for potential full execution, the applicant must submit proofs of bonding and insurance covering the applied-for activity.

(c) A licensee must confirm its intent to carry out the activity at least fourteen (14) days in advance of initiating the activity; and the DEM shall notice the public of said intent on the DEM website, in order that state and public monitoring may be carried out.

(d) With the support of state officials and members of the public, the DEM shall carry out enforcement and shall collect fines for violations.

SECTION 2. This act shall take effect upon passage.

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EXPLANATION

BY THE LEGISLATIVE COUNCIL

OF

A N A C T

RELATING TO HEALTH AND SAFETY -- THE GEOENGINEERING - HAZARDOUS EMISSIONS ACT

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This act would establish regulations to reduce hazardous emissions and increase resiliency by prohibiting the intentional manipulation of the environment by various means referred to as geoengineering, and would collect application and violation fees into a state trust fund. This act would also provide that a person seeking to engage in a geoengineering activity must meet safety, health, and environmental requirements as evaluated in a public hearing process and show proof of insurance and bonding in order to procure a license from the director of the department of environmental management for any such activity.

This act would take effect upon passage.

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