GLOBAL CLIMATE STABILIZATION

A UNIFIED NET INITIATIVE INTEGRATING BIOLOGIC METHOD WITH THE GEOTECTONIC CARBON CYCLE

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DEPLOYING ROCK DUST FOR ENHANCED WEATHERING WITH BIO-CARBON: BUILDING TERRESTRIAL CARBON AND BUFFERING OCEAN ACIDIFICATION TO REDUCE ATMOSPHERIC GREENHOUSE GAS CONCENTRATIONS TO PRE-INDUSTRIAL LEVELS WITHIN A CENTURY:

The Problem: Global temperate zones are destabilized world wide and shrinking as a direct result of Global Warming. "Climate Chaos" is the result.

Global warming is directly linked to elevated levels of greenhouse gas in the atmosphere, causing catastrophic weather events world wide. If unmitigated, this trend will continue to exacerbate environmental degradation caused by the activities of humans, contributing to global geopolitical upheaval, food insecurity and starvation. The increased frequency and magnitude of tropic storms, drought, desertification and wildfires are causing significant loss of life. The melting of polar ice resulting from global warming is flooding low lying land, displacing millions of people and causing massive loss of shoreline habitation and infrastructure.

The Opportunity: Markets are showing interest and profitability in biologic land management with a focus on "regenerative" practices that build soil carbon and increase nutrient density in agricultural products.

There exists an opportunity and a need to provide materials and knowhow to professional land managers, foresters and farmers transitioning to biological management to increase soil vitality, yields and profitability while increasing the nutritional value of crops and produce. Such activity also may be readily linked to current interests in carbon sequestration where the farmer and forester provides the service of capturing atmospheric carbon in soil through the building of biomass on farm and forest. The connection between remineralized biomass, carbon neutral and carbon negative agricultural products, biofuel, biochar, and energy production is a natural one. Sovereign fund managers, houses of finance, central banks, government and inter-governmental organizations and private businesses can benefit from investments in these long term practices and initiatives representing an opportunity to build a durable economic model supporting a global climate stabilization initiative.

The Solution: Private sector businesses and public policy initiatives supporting the procurement, distribution and application of 100% natural mineral and organic inputs integrated with local and regional biomass fuel, energy and biochar production serving the interests of farmers, consumers, houses of finance, governments and NGOs.

Utilizing local and regional resources coupled with the scientific and practical application of agricultural management practices fully integrating these materials and methods into current and new operations will result in profitability and resiliency for business enterprises on the supply side while creating jobs and opportunities in farming communities. Local procurement

and distribution satisfies a critical need to address declining nutrient value in soils and produce, addresses food security and insecurity issues, and integrates these essential needs with such foundational practices as regional fuel and energy production. A global climate stabilization strategy becomes embedded in positive social, political and economic outcomes.

Mode of Action: The natural weathering of the alkaline silicate rock dusts in soils serves to increase photosynthesis of growing plants while decreasing the respiration of CO2 (Carbon Dioxide) and N2O (Nitrous Oxide), the most potent GHGs (Greenhouse Gases) from agricultural soils. Downstream, the base cations released from the alkaline silicates buffer the oceans, mitigating the prime driver for runaway climate change; ocean acidification. Use of horticultural charcoal derived from biomass (BioChar) in land applications can effectively capture three times the applied weight in CO2, measurably adding water holding capacity and providing critical architecture for living soil systems. When properly deployed within biologic agricultural and forestry management methods and in conjunction with the development of renewable energy and energy conservation practices, these inputs present a scalable technology for a global response to catastrophic climate change. Deployed at scale as a global initiative, the cumulative and net effect addresses and stabilizes catastrophic climate change within a century by mitigating the geotectonic causes; elevated atmospheric greenhouse gas emissions and ocean acidification, while providing a viable global geopolitical path to security, cooperation and positive economic development.

Services: Rock Dust Local, affiliated industry partners and associated NGOs provide necessary capabilities from mining and processing to transport logistics and on site deployment and training.

Through co-ordinated planning and development Rock Dust Local and its affiliated partners will provide the necessary logistical capability, scientific research and validation, and knowhow to implement local, regional, national and global initiatives aimed at remineralization, Enhanced Weathering, local food production and security, as well as biomass fuel and energy production with a carbon negative outcome for a climate stabilization initiative lasting a century or more.

THE "SWITCH TO RENEWABLES" TO MITIGATE CATASTROPHIC CLIMATE IS NOT ENOUGH

Major climate scientists including James Hansen have indicated that a switch to renewable energy technology and divestment in fossil fuels will not be enough to mitigate the effects of catastrophic climate change within a century.

Not only is a wholesale divestment in fossil fuel technology politically untenable, it fails to mitigate catastrophic climate change. A switch to renewable energy captures no terrestrial carbon and therefore misses a geotectonic system intervention entirely. As a mitigation strategy the sole reliance on a renewable energy technology fails to deploy the base cations needed to mitigate global warming through the buffering of the oceans. "Geo-engineering" initiatives that rely on technological fixes ignore the largest potential terrestrial carbon sinks of all; Land and Sea.

COMBINING ENHANCED WEATHERING AND REMINERALIZATION WITH A REGENERATIVE (BIOLOGICAL) AGRICULTURE MODEL YIELDS MEASURABLE AND SYNERGETIC EFFECTS.

Adding Rock Dusts and BioChar in fertilizer formulations to the regenerative biologic agricultural model provides the missing underpinnings for a global climate stabilization technology:

Combining these known and measurable inputs with proven biologic methods, and predicting the long term benefits using scientific modeling gauged against field observations and data, benchmark economic values can be readily attached to their deployment visa-vis GHG offsets or other financial vehicles realized through down stream revenue. By embedding these practices strategically with agricultural development a cooperative economic and geopolitical security platform emerges on a global scale.

- **Rock Dust:** Agriculture, Fisheries, Mining and Aggregates, Transport, Construction, Cement, Mine Reclamation, Public Health, Food Production, Finance.
- **BioChar:** Forestry, Agriculture, Fisheries, BioFuels, Renewable Energy Production, Water Purification, Environmental Mitigation, Wildfire Hazard Reduction, Shoreline Stabilization, High Tech Composite Manufacturing, Food Production, Finance.
- **Biology:** Pharma, Beneficial Microbe Production, Biotechnology Development, Food Production, Medicine
- **SYNERGY:** Global Climate Stabilization, Food Security, Human and Animal Health, Clean Water, Biodiversity, Vibrant Economic Development

A note about the author:

Thomas Vanacore has been Pioneering agro-mineral resource identification and procurement for the purpose of soil remineralization and nutrient dense agricultural management for organic and beyond organic farming since 1989. He established Rock Dust Local in 2010, the first company in the United States dedicated to local and regional sourcing of geologic materials for remineralization, enhanced weathering, agriculture and forestry. He is a managing member of Blue Ridge Minerals, LLC an international consortium of agronomists, agricultural minerals commodities suppliers and financiers.

CLIMATE STABILIZATION TRIAD: CARBON, MINERALS AND MICROBES
NEXUS: NEGATIVE EMISSIONS X UNIFIED STRATEGY = DRAWDOWN

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