

**Embrace the Cascading Carbon Economy** (Carbon is NOT the enemy). We are about to enter the Carbon Age. Eg: Graphene, Carbon Nanotubes, Carbon Supercapacitors, Carbon 3D printing. 3D printed homes and transportation where the structure IS the “battery”.

Two carbon reservoirs: Sequestered and Living. We may use sustainable amount of living reservoir freely. **Sequestered Carbon is out of bounds.** Oil comes from Hydrocarbons (not just from the ground).

**Recover the value in squandered and overlooked Hydrocarbons:** Mixed Garbage and Plastic. **Mine Garbage dumps internationally.** Current garbage handling is problematic. **Redesign Blue Boxes to include a lid.** Continued use of Garbage Dumps or Incineration is unconscionable.

Garbage into Oil: Technology to turn waste hydrocarbons into oil is already here – needs to be scaled up! Products include Syngas, oils, bio-char, carbon black. Processes include, Catalytic Hydrothermal Reactor (cat-htr), High and low tech Pyrolysis. Now we can “Leave fossil fuels in the ground”.

**National agenda must include building world class “Garbage into Oil facilities” as new utility** – replacing dumps. **Pay residents and business for their garbage. Upload Municipal waste to Federal sites for conversion** – who sell bio-carbon materials to industry.

Scaling up in the Carbon Age produces jobs in Chemistry, Materials, Artificial Intelligence, Robotics, Transportation, Environmental Rewilding, Ecological Farming. Provides Green Research, Green Think-tank, Green Training, Green World Leadership. Democratize World Energy Supply. Removes Energy Risk. Raises International Economy. Create larger oil industry than ever before (oil is not the villain)!

Even Electric Cars need oil! Mining for batteries causes deforestation. Recycling batteries is difficult. Discarded batteries are toxic waste. Batteries are redundant in light of biofuels (except within major inner cities).

Electric transport will strain electrical production, - Biofuel from garbage unloads the electrical grid.

**Promote production of Terra Preta:** Composting is Great – Terra Preta is vastly superior. Bio-char combined with compost – to produce Terra Preta; hosts beneficial bacteria, fungi, hosts nutrients, electrical attraction to water. Restores Carbon to the worlds depleted soils. Sequesters carbon for thousands of years. Is a true carbon sink. Help mitigate drought conditions by releasing water to plants when needed most. Up to eight-fold increase in farming productivity.

**Build local bio-char production sites.** Transform clean Biomass into Bio-char as a raw material to make Terra Preta; including yard waste, wood manufacturing industry waste, eradication of invasive species, crop residue including dead livestock.

**Must provide Carbon Credit incentives from Carbon Cap & Trade System at local pyrolysis facilities. Government must ease permits to backyard and environmental-event Pyrolysis pits.** Terra Preta is the low tech option we can all do.

**End habitat destruction** (non-native species accelerate habitat loss).

**24/7 harvest across all invasive species** – both plant and animal (plant, animal, and fungi have equal importance to life on Earth). **Ease access to permits for harvesting. Outlaw the sales of invasive species.**

**Promote use of Native Species First. Practice “Ark Gardening”. Create law for mandatory plant labeling that includes native range** (if it’s not from here, it does not belong). **Ease rural land usage swaps** (cut

“island” woodlots / to plant natives in riparian zone and forest connection corridors). **Outlaw cutting of rare trees. Tree cutting bylaw must allow forest income to landowners for tree care. Grow and provide trees to residents and environmental NGOs. Excess biomass directed to biofuel / bio-char conversion.**

**Deregulate all restrictions on HEMP farming. Remove all regulatory costs to farmers regarding HEMP.** Benefits include; Fabric, Fiber, Construction Material, Composites, Animal Bedding, Foods, Oils, Resins, Carbon Sequestration, Nitrogen Fixing, Soil Cleaning and Replenishing, Reverse Desertification, Bio-mass (taking us full circle back to Pyrolysis and Terra Preta).

In Summary:

Lateral move to Bio-fuels, bio-material, Bio-char, together with replenished soils through the use of Terra Preta and Hemp, and rewilding “using native plants only” - work together to “Draw Down” atmospheric carbon. Manufactured carbon containing goods ARE now a carbon sink – at the same time as being raw material in a closed carbon loop. Biocarbon fuels burned, are no different than wood rotting in the forest, or you and I breathing, using an alternate pathway to complete the carbon loop.

Promote knowledge and action. Plan with the latest information. Consider Whole cost accounting.

We are now in the Cascading Carbon Economy.  
**Yes; we can refreeze the glaciers!**