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## Waste, sustainability, controlling the carbon cycle and avoiding climate change

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efining contemporary biological carbon as neutral, fossil carbon as positive and biochar as negative; an ideological framework can be easily developed for the creation of carbon negative societies. The capitalism vs. communism debate is revisited, but neither system addresses the waste problem, linearity, the nature of money, nor the need for sustainability, nor what to do with waste (mostly carbon-based) which normally ends up in the air, water or landfill. Economics, as a mechanism for evaluating the movement of goods and services throughout society, in terms of energy expenditure and waste generation on a cyclical basis is a relatively unexplored field. Waste has a negative cost and represents economic entropy. Entropy can be reversed by inputting energy. A range of potential analogies for the development of global carbon neutrality can be discussed. These include cellular biology and ecology as viewpoints for understanding the relationship between carbon and solar energy flows and biological waste disposal (photosynthesis, respiration and fermentation). Linking mechanics of photosynthesis, respiration or fermentation to generation of ATP (used as the currency of any cell, whether autotrophic or heterotrophic) to human society (defined as a super-organism based on many municipal cells) the development of a currency based on the specie of alternative (electrical) energy, would be analogous to ATP. In arid climates, the limiting factor for human survival would be water, King Darius used water dockets as currency for desert oases. By referencing successful, pre-modern, economies, it may be possible to build an alternative economy based on wasteland, wastewater, waste derived energy, etc. and wasted people. This second tier economy would depend on the waste stream from the existing economy for its manufacturing, building materials, fertilizer, etc. and hence would complement the existing economy. These ideas might also be appropriate for the building of a lunar base.

## Biography

Paul Alexander Comet has completed his MS in Geology from London University, UK and PhD from Bristol University, UK in Organic Geochemistry. He has extensive international experience in petroleum research and has published or co-authored some 50 papers. He has worked at Core Labs, Singapore & Indonesia, then at Texas A&M (GERG) where he was an Associate Research Scientist working on mapping the Gulf of Mexico oils. His present interests include alternative energy, particularly as it relates to the waste stream, as well as the monetization of alternative energy for the building of a complementary alternative society for the disenfranchised.

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