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Anything in, Anything out

Half a world away a battle wages to depose a dictator, in Nigeria pre-election violence has slashed oil output by 40 percent (CNN Money, March 31st, 2003) and this has caused oil prices to increase. Hovering around 30 dollars a barrel, the cost of oil is at an all time high. It's difficult to imagine that only in 1998 the cost was 14.40 per barrel. Fortunately, our savior has come. There is something just over the horizon, it will supply oil at 15 dollars a barrel and cheaper, it will create water and minerals while disposing of any bio-toxins and waste products in its grasp.

"This is a solution to three of the biggest problems facing mankind…This process can deal with the world's waste. It can supplement our dwindling supplies of oil. And it can slow down global warming" – Brian Appel, chairman and CEO of Changing World Technologies. Sound too good to be true? Well, it's not. The answer lies in three simple letters: TDP, or Thermal Depolymerization.

TDP is something well known to mother Earth. She perfected the recipe millions of years ago. With a lot of heat, a lot of pressure, and a lot of time, Earth manages to decompose many complex chemicals through the sliding of its tectonic plates. It is from the deep pockets of collecting by products of this reaction that we draw our oil and natural gas.

As Appel would have us believe, it seems like the age old promise of "more for less has finally come true." With a sprinkle of Appel, a former commodities trader, a sprig of

Baskis, the pioneering microbiologist, a team of chemical engineers, over 40 million dollars in private research funding and the past 10 years, there is now a recipe that can recreate Earth's natural geological process minus several million years.

The first demonstration plant of its kind went online in 1999 with joint funding from the Gas Technology Institute. Based in Philadelphia, the plant has managed to take everything from plastic bottles, to municipal waste, to tires, heavy oil, and medical waste and turn it into oil, natural gas, dry carbon, mineral fertilizers, water, and elemental metals. The process occurs in multiple stages. First a grinder reduces the size of the waste material with water to a light pulp. This is fed into the 'First Reactor' which then uses the water to heat the sludge to 500 degrees F at 600 pounds of pressure. A sharp decrease in pressure in the 'Flash Vessel' forces 90 percent of the water to vaporize from the processed sludge. The 'Second Reactor' then superheats the sludge up to 900 F from which the vaporized waste is now distilled to create anything from water to acid to oils. Because the process occurs at such high temperatures, the first reactor alone is sufficient to decompose the molecular level any known pathogen.

Like any recipe, though, different ingredients require the process be tweaked. Such tweaking can result in an variety of by-products, all which result in oil, but not all which result in fertilizers. The nice thing about TDP is that you can distill a variety of beneficial products.

The process is so impressive that new backers include Howard Buffet, Don Sanders, a refinery aficionado, and 12 million dollars from the government to push the work along. Oil companies see Changing World Technologies (which do not have the proper distributive capabilities for oil) see the 15 dollar barrels as a new source of oil rather than a competitor. The EPA has classified the company as producers rather than waste processors, which means they will also make a profit off of disposing waste not only selling its products.

The first commercial plant of its kind will go online in Carthage, Missouri with a price tag of 20 million, to process over 200 tons of Butterball turkey offal per day. The output for the process includes 10 tons of gas, which will be fed back into the process to sustain itself, 21,000 gallons of water, 600 barrels of almost fully distilled oil, and 11 tons of minerals. New plants in the working include one in Alabama to process chicken offal and manure, one in Nevada for grease and crop residuals. Another in Colorado to process manure, and another in Italy for pork and cheese waste. This set of factories is expected to be up and running in 2005.

Indeed, this all does sound too good to be true, but imagine what could happen to the global economy if it is true: There will finally be a way to return all of our man-made rudiments back to the soil, no more waste problems, water shortages, medical waste disposal issues, the list continues. The results are boundless.