STATE OF NEW YORK

PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission Case 03-E-0188

Regarding a Retail Renewable Portfolio Standard

Brief On Exceptions of Changing World Technologies

CWT is an energy and environmental service company that owns a unique technology which converts industrial waste and low-value streams into fuels, oils, gases and carbons without hazardous emissions.

We are writing this brief on exceptions to the recent recommended decision issued by the presiding judge for rules and guidelines for the New York State RPS. Unfortunately, since our process is relatively new, the current language would exclude our innovative technology and the fuel produced from organic waste, as an alternative or option to producing electricity. The proposed definitions are very narrow - limiting eligible biomass sources to wood products - and do not include a bio-fuels provision. This is critical for immediately making a meaningful impact on reducing our reliance on traditional energy sources. Many electric generation companies have expressed their willingness to utilize our bio-generated oil as fuel that would be compatible with existing and planned facilities.

It has been the generally accepted practice to encourage the development of renewable resources to utilize a broad definition of qualifying materials. This language can then provide a platform from which new resource development can emerge.

As defined, landfill gas is acceptable under the current ruling. The waste material we process would previously have wound up in a landfill. Our process safely and economically converts these wastes faster than the natural microbial process that breaks down organics, thereby producing landfill gas. The use of landfill gas, therefore, demonstrates that the architects of the RPS consider waste as a source for renewable energy.

We believe that we are the only technology that actually sequesters carbon, and at the very least, the waste material above the earth's surface will be deemed carbon-neutral. This is important, as the consequences of global warming and greenhouse gas emissions are being studied and the reduction of CO2 is a stated goal of the RPS.

We currently have a large commercial facility operating in Carthage, Missouri, which is jointly owned with ConAgra Foods, Inc. The plant produces approximately 500 barrels of oil per day from 250 tons per day of animal waste. This represents a new approach, which eliminates feeding animals to animals, a suspected cause of transmitting diseases such as Mad Cow and the bio-accumulation of toxins in animal fats. In addition, the destruction of pathological vectors is achieved by our process. On July 26, 2001, we received a New York State Medical Infectious Waste permit, a copy of which is enclosed. At the federal level, important definitions have been crafted to encourage the use of renewables. This is important to gain potential matching funds, and minimize the commercial risks associated with the development of any new emerging market. The definitions utilized in these programs are considerably broader than those recommended in the RPS case.

Production Tax Credit (PTC) and Production Incentive (REPI)

The existing renewable energy production tax credit provides a 1.8 cents/kwh credit for businesses that generate power from wind, closed-loop biomass (energy crops), and poultry waste for sale to the grid. This credit expired December 31, 2003, but would be extended, retroactively, through December 31, 2004, by S.Amdt. 2687 to S. 1637. S. 2095 (§1301) and H.R. 6 (§1302) would extend the placed-in-service date for three years, through December 31, 2006. Eligible sources would be expanded to include open-loop biomass (agricultural livestock nutrient, forest, and construction wastes), geothermal energy, solar energy, small irrigation power, and municipal solid waste (landfill gas and trash combustion facilities).

The Currently Accepted Definition of Biomass:
BIOMASS. The term "biomass" means any organic matter that is available on a renewable or recurring basis (excluding old growth timber), including dedicated energy crops and trees, wood and wood residues, plants (including aquatic plants), grasses, agricultural crops, residues, fibers, and animal wastes and other waste materials.

Renewables Under Electric Industry Restructuring
To encourage a continued role for renewable energy under restructuring, some states and utilities have enacted such measures as a renewable energy portfolio standard (RPS), public benefits fund (PBF), and/or "green" pricing and marketing of renewable power. In the 108th Congress, the Senate version of H.R. 6 had an RPS (Sections 264 and 271).

We believe that there are three critical areas facing New York and our world today, which need to be addressed. They represent tremendous opportunities to rebalance our living planet. By emulating earth's natural cycles, Changing World Technologies has proven it can successfully address the following critical areas using its Thermal Conversion Process or TCP.

1. **Renewable energy -** clean fuels which are produced from a renewable resource.
2. **Waste utilization** - organic waste material that has been converted safely without combustion.
3. **Global warming -** much less fossil fuel will need to be extracted from beneath the ground.

By broadening the definitions to encourage sustainable waste utilization, we can impact and stimulate a dormant carbohydrate economy and put the wealth back into our farms and lands.

Market Potential

Of the 12 billion tons of waste produced in the United States each year, over 50% is generated from agricultural sources. Using agricultural waste sources only, approximately 4 billion barrels of oil could be produced annually. If by 2020 the technology could be put in place to utilize 50% of that waste, approximately 2 billion barrels of oil would be "extracted" annually from wastes generated in the United States. This would represent a significant step forward in reducing our dependence on foreign oil and minimizing global warming, both of which are stated goals of the RPS.

Bio-Refinery and Waste Utilization for the Renewable Economy

Fuel, power and industrial chemicals derived from the process are renewable because they originate from organic materials derived from food and agricultural production. On average, approximately 40% of a live animal is inedible, allowing for an ample feedstock supply. In the U.S., agricultural waste residues are conservatively estimated by the EPA to be in excess of 6 billion tons every year. Agricultural residues will have an average moisture content of approximately 50 percent. When a very conservative oil yield of 20 percent is contemplated, 4 billion barrels of oil could be produced:

6 Billion Tons of Residue, 50% Dry Matter X 20% Oil Yield

	600	Million Tons of Oil
X	2,000	Pounds in a Ton
÷	7	Pounds to a Gallon
÷	42	Gallons in a Barrel
	4	**Billion Barrels**

In the past, dependence on oil has cost our economy dearly. With growing U.S. imports and increasing world dependence on OPEC oil, future price shocks will occur and will be costly to the U.S. economy. Ultimately, the solution to the oil dependence problem lies in technological alternatives, such as the TCP process, which utilizes renewable feedstock and existing infrastructures to turn waste into oil, gas and coke.

The food processing industry in the U.S. generates billions of pounds of organically rich wastes per year. This waste is associated with both the processing of animal and plant products. By using the TCP process, several concerns will be alleviated – the generation of malodorous air emissions associated with rendering plants will be eliminated; the disposal of billions of kilograms of food wastes will significantly reduce landfill utilization, thereby increasing future capacity. In addition, the emission of greenhouse gases that landfills generate, such as carbon dioxide and methane, which contribute to global warming, will be reduced.

As the food processing industry continues to expand, food processors will face significant economic and environmental pressures to develop and implement productive uses for the waste from their processing facilities. The necessary conditions appear favorable for the food industry to adopt an efficient and economical process to convert food-processing wastes, including agricultural mixed wastes, into useful high-value products without discharging odorous pollutants.

An additional impetus to seek treatment alternatives is the enforcement of wastewater discharge regulations and escalating sewage surcharges. The food processing industry must seek cost-effective technologies to provide pre-treatment or complete treatment of their wastewaters and solid (wet) wastes. The proposed process is ideally suited for this need. Historically, food processors have relied on local publicly owned treatment works for wastewater treatment and disposal. Increasingly, this option is becoming less available. During the last decade, environmental pressure has increased to comply with wastewater discharge permits, in spite of the dwindling federal grants for construction of new and upgraded publicly owned treatment works.

Municipal and regional sewer authorities are requiring industries to reduce their organic biological oxygen demand (BOD) and chemical oxygen demand (COD) and solids loading to the sewers. Due to the high BOD concentrations and high levels of suspended solids, ammonia and protein compounds in food processing wastewaters, this industry is under additional scrutiny. The food processors need cost-effective and application-specific treatment technologies to manage their wastewaters and solid wastes effectively. The thermal process meets or exceeds the needs of the industry.

The technologies available to the food processing industry, over and above using existing publicly-owned treatment facilities include: landfills, composting, land application, bio-treatment, and traditional thermal oxidation treatments. Each has limitations and drawbacks, which makes the search for alternative processes necessary. This is a driving force behind the expanded application of the TCP technology.

Landfilling

The TCP process will achieve a reduction in landfill utilization. The most common method of solid waste disposal is by landfill. Dwindling landfill capacity is a problem that is repeatedly being addressed by businesses and communities across America. More than half of the nation's waste disposal sites have closed, and the remaining landfills are

filling rapidly. Waste disposal costs have risen dramatically due to restricted site location of landfills, stricter operating procedures including long-tem care of closed sites and financial assurance for monitoring existing landfill locations. Strict environmental demands to comply with federal regulations are costing approximately $1 million per acre to open new waste disposal sites.

As much as 40% of solid waste can currently be recycled, and this should increase to 60% in the future. This will reduce landfill loading considerably. The focus is being taken a step further to reduce waste at the source, and developing strategies and processes for waste reduction is becoming increasingly important to protect the environment and nurture human health. For the organic waste that cannot be recycled by conventional means, the TCP process offers a recycling path to valuable energy products, which will further reduce the waste that goes into landfills.

Global Warming

Global warning is caused by the gradual increase in the earth's surface temperature. The issue of global warming is complex, though it is clear that CO_2 and other carbon containing gases contribute to it. One way of looking at it is that the troposphere (all the region of the earth above the ground) contains an amount of carbon. The carbon is in several forms including CO_2, plant material, animal flesh, animal wastes, carbonate minerals, etc. If there were no carbon entering the troposphere, the carbon would go through natural cycles among these various forms.

Unfortunately, our use of fossil fuels represents a continuous flow of "new" carbon into the troposphere. The fossil fuel starts as natural gas, petroleum oil, and coal. These materials are used in many ways, but primarily as fuel, so that the carbon in them becomes CO_2 in the troposphere. Like all the carbon already in the troposphere, the carbon from fossil fuels enters the cycle by first being burned to CO_2. CO_2 is then converted to plant material, which can become animal flesh and waste, and so on. But now there is more total carbon in the troposphere, so the concentration of all the forms of carbon is increased, including CO_2 …and we have global warming.

In contrast with most other applications, the TCP process uses carbon already in the troposphere, resulting in no net increase in carbon, and no net increase in CO_2. Burning the oil produced from the Thermal Conversion Process or "TCP' will not increase the carbon in the Earth's troposphere. In fact, the TCP process will decrease troposphere carbons by sequestering some of the carbon already in the troposphere in the form of carbon black and other solid products such as tires and plastics.

TCP fuels offset fossil fuels that would otherwise be burned and increase the total carbon in the troposphere. By developing the TCP process to utilize expanded feedstock from waste to create useful energy products, less fossil fuel is extracted from underground reserves. The factors contributing to global warming are effectively reduced.

We encourage the Public Service Commission to support a broader definition that is inclusive of our raw material feedstock and encourages the utilization of all biomass. In summary, this will allow for:

1. Creation of new high paying industrial jobs.
2. Expanded bio-based market.
3. Environmental and energy benefits for New York State.
4. Elimination of waste currently going into feed, landfills and incinerators - elimination of prions and dioxins.
5. Reduced global warming by encouraging the use of waste material.
6. Attraction for industry to stay in New York State, since waste technologies impact the competitive nature of farming and processing (waste utilization).
7. Use of existing energy infrastructures, ensures energy support and interest.
8. Stabilize disruptive price fluctuations in energy commodities.
9. Real chance of distributed generation.
10. Reduce dependency on foreign oil and allow for energy security.

We remain hopeful in helping New York State to meet its challenges of eliminating waste, providing a clean source of renewable energy and minimizing global warming, as well as demonstrating to the world that a properly structured renewable portfolio standard will benefit everyone. We thank the Commission for the opportunity to comment on this very important proceeding.

Respectfully submitted,

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Chairman and CEO