

*James W. Taylor, Jr.
Chief Executive Officer*

Melissa Treers, P.E.
NYSDEC Division of Materials Management
625 Broadway
Albany, New York, 12233-7260

RE: Taylor written public comments on NYSDEC proposed draft rules and regulations and DGEIS
To solid waste facilities - 6 NYCRR Part 360 Solid Waste Management Facilities

September 12, 2016

Dear Ms. Treers;

We appreciate the opportunity to provide comments on the proposed draft rules and regulations. This tremendous undertaking is both timely and much needed by all parties. Your team is to be commended for this undertaking.

The comments herein are respectfully submitted by James W. Taylor, Jr. President & Chief Executive Officer of Taylor Biomass Energy, LLC, AND it's "FIRST-COMMERCIAL" project company Taylor-Montgomery, LLC of Montgomery, Orange County, New York.

Introduction

Taylor Biomass Energy is very encouraged by the leadership and timely actions taken by the Governor, the New York State DEC Commissioner and NYSDEC staff and specifically your team developing this update for the State of New York. Before 2000, Taylor (used collectively to connote businesses under the Taylor title) through its predecessor organization Taylor Recycling Facility, LLC (TRF) now known as Taylor-Montgomery, LLC, created businesses that have and will continue to clean the environment in

the State of New York. This is the first time in Taylor's business history that it is in a position to provide comments on such important solid waste regulation. Taylor actively participated in the State's creation and development of a Renewable Portfolio Standard Case, 03-E-0188. Taylor is also an active party in the New York Public Service Commission's Case 15-E-0302 Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a NYS Clean Energy Standard (CES). Having participated in both these PSC and DEC proceedings, we note that it is critical for the different NYS regulatory agencies and proceedings supplement and complement each other. It is imperative that these interagency regulatory actions provide NYS with coordinated final policies that are not in conflict with each other.

Taylor has always worked diligently to maintain a clean sustainable environment and to benefit New York State communities through the formation of well-paying jobs and benefits. The jobs that Taylor provides builds skills and add value for the competitive New York State market for human capital. Taylor comments have several purposes. First, a general introduction of Taylor as a qualified commenter in this proceeding; second, background on Taylor that specifically relates to this proceeding; third and most importantly the significant impact these proposed rules and regulations will have on the use of biomass. As used herein Taylor characterizes biomass as carbon and organic feedstocks from NYS solid waste-streams which after Taylor's processing provides a clean cost effective alternative energy biofuel qualified under the New York State RPS to provide renewable energy.

From a practical standpoint working with different NYS agencies, to implement NYS Energy and Waste policies presents a big CHALLENGE for all parties. Biomass (both closed and open-looped) is the carbon fraction or the "biomass fraction" from three waste streams of Construction and Demolition debris (C&D), Municipal Solid Waste (MSW) including Commercial Waste (CW), and Waste-Wood(s) (WW). In order for biomass to be used as a clean feed stock to generate renewable electric energy it must be

sorted and separated from these three incoming waste streams. This solid waste management practice and business model for extracting clean biomass from waste streams is vital to achieving the Governor's recent 50% renewable energy goal by 2030 mandate. These new renewable fuel products with associated technologies such as gasification are in our immediate future and must be addressed and included in these proposed regulations. Such consideration is critical to assure affordable consumer energy products and waste disposal. New York State needs to remain competitive by using its wastes wisely. Taylor comments which follow on the proposed regulations are grounded in a practical New York State innovative energy project, biomass from NY waste streams, and market place facts. Taylor comments will detail the challenges facing all of us and will provide some of Taylor's practical market place experiences working to achieve NYS renewable energy goals.

The Challenge

We have come to know and refer to waste from a regulatory perspective by where waste is generated and how to control its environmental impact. Municipal Solid Waste is collected from municipalities. Construction and Demolition debris is picked up from construction or demolition sites. Residential, Commercial and Industrial waste is collected respectively from residences, commercial businesses, or industrial processes. Waste which might originate from any of these sources is termed hazardous if it contains any hazardous products or ingredients. Today society demands clean and cleaner products from waste to energy projects generating electric supply or usable fuels. Taylor has learned over the past 25 years that "Waste is also a societal resource. Waste has value and society must stop wasting its waste." It is even more critical now with the Governor's recently enacted 50% renewable energy mandate by the year 2030.

If we are going to work towards a greener planet utilizing future green technologies that with science, chemistry and engineering can be fueled from the BIOMASS fraction of our waste-streams, the regulatory process must create a simple path forward for this to become a reality.

Under the current and proposed regulations, the path forward using extracted clean fuel from waste streams will be costly, and time consuming. As proposed the regulation as detailed subsequently will put a damper on moving forward with using waste as a valuable resource.

Taylor Business Origins in Montgomery, New York

The Taylor businesses find their origins in a tree service business entitled James W. Taylor Tree Surgery, Inc. founded by Jim Taylor's father in 1956. The original business was located for many years on Plains Road in the Town of Montgomery, Orange County, New York. Jim worked for his father upon his discharge from the U.S. Army in 1970, all the while learning the business and purchasing the final 25% of the tree business from his father in 1984. The business grew based upon expanding services into electric transmission right of way vegetation management for electric utilities, and land clearing site preparation for development of new project sites and roadways. Taylor Tree, Inc. grew to be one of the largest land clearing and tree service companies in the region.

In 1989 NYS enacted a New York State Department of Environmental Conservation (NYSDEC) Solid Waste Policy. This new policy was developed under the environmental leadership of then NYS Assemblyman and later US Congressman Maurice Hinchey (former Chairman of the NYS Assembly Environmental Conservation Committee). This visionary policy and plan established steps to take in treating and disposing of New York State's ever growing waste streams. Reducing, re-using, recycling, and recovering energy content and landfilling and incineration as the last choice of disposal made up the action items in that plan. Only after reducing, re-using, recycling and recovering the energy content should landfill and incineration be considered by New York State. The first three R's in the plan are

straight forward and could be readily accomplished. However, recovering the energy content was placed to the side since no environmentally acceptable technology was readily available at that time. Over the course of the last 27 years Taylor has developed environmentally sensitive sorting, separating, recycling, gasification, and electric power production technologies to accommodate all 4 R's in the State 1989 Solid Waste Policy. Recently NYS upgraded the NYS Solid Waste Policy to become known as "Zero-Waste."

New Regulations Needed for Organic Waste

We should not place these organic/biomass ingredients into landfills to generate low quality fuel gases to create electricity as a part of the favored preferred policy. At best we can capture only approximately 40% of the greenhouse gases collected allowing the remaining approximately 60% to escape from landfills into the environment.

The new policy on anaerobic digestion should be written to include any other current or future technology that can convert biomass and approved organic materials into a clean synthesis gas or a fuel gas for the production of electricity. Such a policy will minimize greenhouse gas emissions production and should become mandatory for any/all existing landfills. At a certain effective future date, these convertible materials should be banned from landfill disposal as new alternative and innovative clean energy technologies come on line. Banning these materials from landfill disposal will reduce greenhouse gases as well as our overall carbon footprint.

The Taylor Biomass Energy technology business model is environmentally-friendly and provides the 1989 solid waste management policy missing link for the recovery of energy- content contained in the biomass portion of the waste stream. Such a technology greatly reduces landfilling and incineration of organics and reduces the related greenhouse gas emissions that escape into the environment.

Taylor Contributions to NYS Waste Regulation

Originally road building or rebuilding resulted in biomass waste from trees, tree stumps and land-clearing debris either being burned on site or buried in the toe of slopes or close to the road. The New York State DEC during 1989 issued notices of proposed rulemaking, and issued final regulations in 1991, initially declaring that trees and tree stumps were to be treated as a waste product of road construction to become known as Construction and Demolition debris (C&D).

Since Taylor previously operated in that business sector, it was provided a six month “grand-fathering” period to make the appropriate applications required under the new law. The Taylor tree business viewed the advent of these DEC regulations as an opportunity to treat the wood and wood by-products resulting from road construction as a resource that had value and should be recycled. During this period of transition Jim Taylor worked productively with the engineering firm of Metcalf & Eddy and the NYDEC to implement the resulting Section 360-16 Solid Waste Regulations that led to the DEC permitting of Construction and Demolition (C&D) recycling at the TRF.

These regulations led to the transition of Taylor Tree into Taylor Recycling Facility (TRF) a DEC Part 360-16 permitted C&D solid waste processing facility in Montgomery, New York. TRF became a first of its kind in NYS as well as one of the first C&D recycling facilities permitted in the United States.

TRF was established and developed not only to process waste coming from road construction, but also all of the constituents coming from waste at construction and demolition project sites in general. It was during this time when Taylor developed its next level of skill sets in sorting, separating and recycling.

Taylor early on believed that “Waste is a resource; we must stop wasting our waste” as waste has value. It should also be pointed out that Taylor was a pioneer in developing the C&D recycling industry and its environmental regulations. Taylor provided much of the initial due diligence for testing and controlling air emissions, leachate, dust, noise and employee health and safety which became part of the current

permitting requirements and regulation of C&D facilities. Taylor Recycling Facility provided construction and demolition contractors with, among other sizes, 12, 15, 20, 30 and 40 cubic yard containers on construction sites. Full containers would then be transported back to the Taylor Recycling Facility on Neelytown Road in Montgomery for recycling of the C&D materials contractors placed in the containers.

Taylor Recycling of C&D Waste

As the region grew TRF grew. What started out at TRF as a manual operation with employees sorting and separating materials received in containers, hand picking from within the roll-off container, evolved to take advantage of material handling innovation for sorting, separating, and recycling materials received.

Most specifically Taylor sought to take inbound waste streams and turn them into products meeting consumer market needs. Initially the products consisted of asphalt, brick, concrete, metals, unadulterated waste-wood, gypsum and cardboard, making up approximately 35 to 50% of the incoming waste stream. The unadulterated waste wood was shredded to manufacture landscape decorative mulch products. Over time the decorative mulch had environmentally friendly coloring added to meet the surrounding communities' landscaping requirements and purchase orders.

Taylor saw the need to keep gypsum from wall board out of landfills. The sulfur content in wall board gypsum is one of the primary causes of the rotten egg odor from hydrogen sulfide gas production at landfills. As a consequence, TRF purchased a company which had the capability of stripping the paper backing off discarded unpainted construction scrap wall board. The remaining inner gypsum was then crushed for resale to gypsum and wall board plants. The stripped paper impregnated with gypsum is then used as an equestrian bedding product. The paper backing product absorbs equestrian urine and chemically neutralizes the urine, thereby reducing the environmental impact of urine contaminating ground water. Crushed gypsum may also be sold to farmers for the purpose of adjusting the alkalinity of

farm soils altered by repeated pesticide applications. Initially the remaining 50 to 65% of the incoming waste stream which could not be recycled had to be transported long distances and disposed in landfills.

Better DEC Daily Landfill Cover Regulation

Taylor viewed the transport of 50 to 65% of the waste stream as going to distant and out-of-state landfills as another opportunity for reducing, re-using, recycling and recovering the energy content. Taylor proceeded to take the product headed for landfill disposal and turn it into a market product used to cover landfills at the end of each operational day to prevent wind-blown debris, fire, odor, and other environmental damage. The product called alternate daily cover (ADC) consists of grinding the remaining non-recyclable material, into a coarse two inch and smaller product. In early years C&D ADC replaced the need for permitting of new mines and mining of virgin soils previously used for daily cover. This provided an income producing recycled waste product with superior traction capability for landfills. This ADC product also tremendously reduced maintenance costs for landfill user's truck tires and equipment repair of vehicles delivering waste products to landfill at remote working sites. Taylor continued to expand its research, development, and demonstration with the NYDEC through the pursuit of a Beneficial Use Determination (BUD) to use ADC as an erosion control and construction material in landfill closure projects. As an aside, landfills have recently limited giving preferential billing treatment to C&D ADC manufacturers because in some cases current NYSDEC practice considers C&D ADC like any other waste delivered to a landfill which counts against the landfill's permitted daily inbound tonnage and available space limitations. Such regulation greatly curtails the development of new, and expansion of existing, construction and demolition facilities and recycling in New York State and should be revised in the proposed new regulations.

C&D facilities create many new added jobs to the New York State economy. Today's environmental concerns and limited landfill space are more reasons why C&D should be recycled rather than being

placed into a landfill. We should also consider in new regulation requiring C&D ADC use in landfill cover as an additional enticement resulting in more C&D recycling.

The current Taylor-Montgomery, LLC, recycling operation off Neelytown Road has grown from its original 38.6 acres to 95 acres with an anticipated future addition of approximately 25 acres to the project site, bringing the total to approximately 120 acres. What started out as a manual labor, positive hand pick, sorting, separating, and recycling operation, through research, development and demonstration of technology has developed into a highly automated and mechanized operation. Currently Taylor has the potential capability of sorting, separating, reusing, recycling and in the future gasifying up to 90% of the waste stream coming onto the site under normal conditions.

Although Taylor reached a recycling capacity of up to 95%, 50 to 65% of that incoming waste stream was destined for use in landfill closures or alternate daily landfill cover. As of this date most of the available landfill space is currently owned by out of state corporate giants. Thus the Taylor businesses and other small private waste businesses need to adjust to a quickly changing market place in order to continue to operate.

As the 20th century drew to a close Taylor Recycling Facility had become a premier C&D recycling facility in the United States. The operation was highly automated and its local laborers union contract provided skilled workers on mechanized sorting and separating lines to process up to 307 tons per day (TPD). (As described in subsequent parts of these comments with the construction of a new biomass gasification system this processing of incoming waste will go up to 450 tons per day.) Most of the waste processed found recycling destinations, with a very small percentage of hazardous materials in the incoming waste stream (less than 1%) requiring special processing. However, as previously indicated the market for ADC is under pressure and the long term use of ADC as a valuable recycled product was at risk and declining.

Gasification of Clean Biomass Derived from Waste

Early in 2001 Taylor commissioned an internal study of other opportunities for reducing, re-using, recycling and replacing the ADC product with a new environmentally friendly product. The ADC product was approximately 60 percent biomass. The internal study performed by Taylor used the professional skills of an employee hired to assist in recycling market development. This employee had been intimately involved in the development of New York State's recycling practices and policies. The objective of the study was to determine how to replace ADC with an alternative product or technology that could better utilize the valuable resource of biomass from the organic fractions of C&D, MSW and waste-wood. Biomass, as a material derived from living, or recently living, organisms could be utilized in a number of ways to produce combustible gases or chemical by products. The investigation and analysis focused on how best to turn biomass, which had been sorted and separated from a waste stream, removing all hazardous materials, into a clean usable synthesis gas. The indirectly heated gasification process which Taylor is utilizing today finds its origins in this study that took place over 15 years ago. The project currently is seeking financing and remains to be constructed.

As opposed to other gasification processes (which were also studied in the initial research performed on other uses for biomass) such as air blown gasification technologies, the Taylor gasification process produces a very clean, white ash (limited carbon remains as most carbon is consumed), a higher energy (Btu) content synthesis gas (syngas) with fewer tars and, if used in electric power generation firing, much less and cleaner air emissions, well below New York State and EPA permit limits. The Taylor-Montgomery project is currently DEC permitted as a "minor-source" of air emissions. It is Taylor's intention to file for a beneficial use determination (BUD) for the ash produced once TCLP testing has been performed to confirm the ash's clean properties and ingredients.

The results of the study concluded that the new Taylor biomass to energy technology selected could be married to waste recycling in which Taylor has best in class competency. The patented gasification technology that is best in its class along with a highly efficient combined cycle generating plant will continuously produce 24 by 7 base load renewable electric supply. For simplicity these three parts of sorting, separating and recycling; combined with biomass gasification; and high efficiency power production will be called the Taylor Biomass Waste & Energy Solution (TBWES).

At the same time that Taylor was investigating recycling solutions; the State of New York was investigating ways to encourage the use and development of renewable energy. Taylor as a result worked along with NYSERDA to assure eligibility of TBWES as a renewable source of electric supply allowing for bidding into the NYSERDA centralized procurement process for Renewable Energy Credits (REC). Taylor engaged in two studies jointly funded with NYSERDA, the first entitled "Debris-Derived Biomass Pyrolysis to Produce Renewable Electric Power" (Agreement No. 7886-October 27, 2003) and the second entitled "Taylor Recycling Facility Pre-Development of Montgomery Site for Biomass Energy Development" (Contract No. 8997-January 7, 2005). The final reports for both studies were filed, accepted, and are available through NYSERDA.

DEC Regulation Favors Landfill Gas Emissions

The first 2003 study; the Debris-Derived Biomass Pyrolysis study investigated and analyzed C&D waste which comprises approximately 30 to 35% of all solid waste produced in the state. The findings of the study showed that New York at the time was exporting 8.3 million tons of waste to out of state mega landfills run by the top ten waste disposal companies in the US which control 90% of the business in the US. The dumping of waste in landfills produces among other gases, methane, carbon dioxide, hydrogen sulfide, and even methyl mercury. Since organic waste starts decomposing as soon as disposal takes place, at best no more than 40% of these gases (according to the US EPA) can be captured and run

through gas combustion prime movers generating electricity at landfill sites. The study pointed out the superiority of sorting, separating, recycling and gasifying close to the point of waste origin versus long-haul trucking, landfilling, creating landfill emissions, and generating electricity using landfill capped off gases. It should be noted that currently under the NYS Renewable Portfolio Standard Biomass Power Guide, landfill gas generation is given a beneficial eligibility position over other types of biomass based renewable power production. An eligible landfill gas generator is not required to use only a clean biomass fuel, sourced from a DEC-approved waste facility, and subject to the New York State Beneficial Use Determination (BUD) review process. To be eligible the landfill gas generator does not need to pay for an independent DEC monitor on site, or to sort and separate or comply with the mandatory recycling requirements placed on the incoming non-source separated recyclables and biomass within the landfill. Overall the study pointed out that in order for economies of scale and waste market dynamics to be accommodated within adequately dense population areas, the use of adulterated biomass was required for sorting, separating, recycling, clean gasification, and power production to be profitable and sustainable in the competitive market place.

Testing the Taylor Biomass Energy Process

The second 2005 study co-funded by NYSERDA, the Pre-Development Biomass Generation Study, examined the three parts of the Taylor Biomass Energy Solution. Part A consists of the sorting separating, recycling and creation of processed biomass fuel (PBF). Part B is the gasifier and production of a syngas. Part C consists of the combined cycle power plant with electric output generation. The study established that a 250,000-person population within a 30-mile radius could support the biomass fuel input requirements of a 300 dry ton per day gasifier. Using municipal solid waste from Orange County in direct proximity to the Taylor project on Neelytown Road, the study examined the incoming waste streams and analyzed the waste according to materials and energy content. As part of the study a

preliminary site plan was developed for Neelytown Road, keeping waste processing and operations safe and clean within buildings on site.

In addition to Taylor's years of experience and analysis of C&D waste wood, Taylor processed over 1,000 pounds of typical Orange County MSW at the Orange County transfer station, within a roll-off container, pelletized the biomass prepared fuel (BPF) and shipped it to the National Renewable Energy Laboratory (NREL) in Golden, Colorado, for evaluation. The material was placed in a pilot scale indirectly heated gasifier at NREL which was modified to accurately simulate the Taylor gasifier. The tests demonstrated the viability of the enhanced process and provided key design information.

During the Taylor-Montgomery (Neelytown Road) permitting process undertaken with the NYDEC after the NREL study, it was concluded that "potential emission rates from the subject source will be lower than all applicable regulatory requirements and thus represent a level of mitigation that goes well beyond that required to meet New York State and federal regulations."

Overall this study helped to define more precisely what the Taylor Biomass Waste & Energy Solution would consist of based upon the A, B and C components of the project described above. The study confirmed independently that the sources of incoming local biomass presented no solid, liquid, or emission hazards and in fact would help to reduce various air emissions from vehicular traffic to and from distant landfills.

Thus the original Taylor business model evolved, from attempting to reduce the manufacture of Alternate Daily Cover to a Biomass Gasification System. The new business model takes biomass historically going into alternate daily cover for landfills and replaces it with a new electric power product referred to as a renewable "green energy." The new business model entails clean and sustainable base-load 24/7 electric energy supply. The Taylor electric supply comes without the daily interruptions

characteristic of wind or solar power. In addition, there is no need for annual state or federal taxpayer subsidies.

Technology for the Taylor Organic/Carbon/Biomass Waste & Energy Solution

The technology that Taylor has developed to produce 20 megawatts of base-load renewable electric supply and capacity builds upon the core competency of one of the premier recyclers in the State of New York. The technology reduces greenhouse gases that would otherwise be generated, and has the potential to greatly reduce the landfilling and exporting of valuable organic fractions (biomass) with partially uncontrolled methane release, a greenhouse gas with 21 times the global warming impact of carbon dioxide. This sorting, separating and recycling process uses manual labor in part to assure that the organic fraction (biomass) routed to the gasifier produces a clean fuel. The gasifier itself is state of the art proven technology producing a higher Btu gas while at the same time reducing tar generation. The syngas produced by the gasifier is not burned in a boiler but is piped to the front end of a combustion turbine (CT) in a combined cycle electric generation plant where exhaust heat from the turbine is captured and along with heat from the gasification process gas streams routed to a boiler, steam produced from this heat recovery is used to generate additional electric supply thereby increasing overall process efficiency.

All three components of the Taylor Biomass Waste & Energy Solution from sorting, separating, recycling and preparing biomass fuel from the organic fraction; to gasification; to combined cycle electricity generation are proven state of the art, mature technologies. Taylor in its design and specification plans has spared no expense to assure the highest quality of materials used and cleanliness of all products and by-products manufactured.

Waste from three disposal streams will be delivered to the Taylor-Montgomery project site- from municipal solid waste (MSW), from construction and demolition (C&D), and from waste-wood. All three

waste streams will go through visual and mechanical processing using employees on site to extract residue ingredients and materials for other recycled products.

The C&D and waste-wood streams will be processed as has been the case at the Taylor Recycling Facility for over two decades, going through visual inspection, sorting and separating, extraction of recyclables, picking and disposal of residual materials, and shredding of biomass into processed biomass fuel (PBF) for delivery into the gasifier. The PBF will first have all inorganics such as metal, glass, aggregates, and unidentified fines removed for further recycling or processing.

For the MSW waste stream there will be two 35 tons per hour processing lines with not only manual and visual sorting but also state of the art optical and air blown sorting and separating technologies.

Extracted for recycling will be PVC, metals, cardboard, aggregates, unadulterated scrap wallboard, glass, and plastics. All hazardous materials will also be extracted such as batteries, tires, aerosol cans, paint, painted and pressure treated woods. The PBF manufactured will have a gradation dimension of two inches or less.

On a normal work day these three waste streams will account for approximately 1,050 tons per day coming into the Taylor facility. The processing lines will operate six days a week and provide the required amount for PBF storage to accommodate maintenance down times, weekends, and holidays. The PBF fed into the gasifier will amount to approximately 300 tons per 24-hour day (on a dry basis).

The gasification system consists of three primary vessels. The first vessel into which the PBF will be fed generates gases from the incoming biomass. The biomass fed into the first vessel is comingled with a specified hot sand of approximately 1,800 degrees Fahrenheit which immediately breaks down the biomass into volatile gases consisting predominately of carbon monoxide, hydrogen and methane and a small amount of char. The sand and char remaining after the gases are produced are circulated to the second vessel, and the syngas produced is routed to the third vessel, a gas conditioning vessel, used to

break down any aromatic tars in the syngas and enhance the hydrogen concentration in the gas. In the second vessel air is injected and the char and oxygen in the air react creating heat which reheats the sand, which is then circulated back into the first vessel, comingling with the incoming biomass. The syngas produced has a heating value of approximately 400 Btu/scf. The syngas produced after conditioning is cooled in a heat exchanger prior to compression and injection into the combustion turbine. The syngas produced amounts to approximately 160 MMBtu/hour or the equivalent of 160 mcf of natural gas per hour.

In the second vessel where the char is consumed to reheat the sand, remaining carbon will be consumed in the exothermic reaction leaving essentially a carbon free ash. The reheated sand on its trip back to the first vessel travels through the third vessel. The third vessel, the gas conditioning reactor, allows the tars in the product gas within the reactor to react with steam, converting the tars into additional hydrogen and carbon monoxide, as well as proportionally increasing the hydrogen content of the product gas while reducing the carbon monoxide content. The resulting gas is a hydrogen-rich syngas suitable for power generation or other synthesis applications.

The syngas thus produced becomes the fuel for the third part of the TBES, the power island. The power island consists of two turbines and two generators. The product syngas produced in the gasifier is used, after cooling, clean up of remaining contaminants and compression, in the combustion turbine generator. Exhaust gases from the combustion turbine pass through a heat recovery steam generator (HRSG) creating steam for the second component in the combined cycle power island, the steam turbine generator. Not only is steam produced from the combustion turbine exhaust gases but also from two other heat recovery steam generators, one from the cooling and compression of the syngas before it is fed to the combustion turbine and the other from the second sand reheating vessel exhaust gases. Thus steam for the steam turbine generator is fed from three heat recovery steam generators making the

overall efficiency of the system high in comparison to other simple cycle steam generation systems, or other gasification systems. The overall efficiency or heat rate of the TBES is approximately 8,500 Btu's to produce one kilowatt hour.

The combined output of the two generators operating in parallel will be on the order of magnitude of 20 Mw net, for delivery into the nearby Central Hudson 69 KV WM transmission line. The project was included in the NY Independent System Operator (ISO) Class Year 2011 Facility Study and currently has an Interconnection Agreement in place with Central Hudson and the NYISO.

The limited emission gases produced by the facility will be treated and cleaned prior to release, and the facility will have continuous NYDEC emission monitors to demonstrate and assure conformance with NYDEC Title V permitted emission levels. Both the combustion turbine generator and the second heating vessel emissions will be scrubbed using selective catalytic reduction (SCR) with a caustic solution to remove criteria pollutants. An activated carbon bed will be used to treat water used in scrubbing, removing any organics picked up in the water treatment.

Taylor's Participation in the Development of the NYS Renewable Portfolio Standard

Taylor was and still is an active participant in New York Public Service Commission Case 03-E-0188- Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard. During the initial stages of the Proceeding Taylor worked on qualifying the organic fraction (biomass) as a source of renewable energy supply. The focus was to apply Taylor's demonstrated expertise in recycling and New York State's policy to reduce, reuse, recycle, and recover the energy content from the remaining biomass prepared fuel through an environmentally friendly gasification process. As previously related, Taylor's intention was to find alternatives to alternate daily cover on landfills and to reduce and reuse society's discarded materials. Taylor's gasification process is not a pie in the sky theoretical application

but a practical solution for turning discarded waste into useful products, or source material for the manufacture of useful products.

As proceedings such as this go, and as is the historic practice of New York State to gather information for a complete and robust record, there are many conflicting comments, proposals, and opinions articulated which became part of the continuing record for drafting the proposed rules and regulations. Although not specifically stated, organization size and national reputation does matter in such proceedings. Thus Taylor as a smaller organization with an outstanding regional, state and national reputation has to weigh in against other much larger proceeding contributors not interested in the merits of utilizing organic/biomass fractions of our waste stream as a feedstock for alternative, innovative energy or biofuels technologies such as the Taylor-Montgomery project. However, if we are to reach the Governor's 50% by 2030 renewables stated goal, New York State rules and regulations must be incorporated to facilitate this mandate.

As part of this proceeding a general environmental impact statement was filed describing the potential environmental impacts of these proposed rules and regulations. This record must take into account these statements which support the use of the organic fraction or biomass fraction of the waste stream to reduce greenhouse gases. This regulatory process must create a path forward for increased waste to energy production using organic/biomass fractions from waste streams generated in New York State.

DEC Permitting and Monitoring of the Taylor Biomass Process

As an integral part of the DEC permitting process, a thorough review of all process systems and their potential emissions using the proposed biomass fuel input was conducted for the Taylor project. The DEC determined that the facility met emissions requirements or standards of NY State and issued all appropriate permits required for the facility. The current Taylor air permit further provides for and

requires analytical testing of the organic/biomass feedstock to determine if there are any harmful emission precursors present. The Taylor air permit states:

Monitoring Description:

The facility shall conduct biomass feedstock sampling according to this approved plan. Sampling will occur just prior to the gasification tower at the exit of the storage facility

· Frequency will be once per shift for:

o Analytical Parameters

- 1. Loose Density*
- 2. Non - Biomass Content for quality control*
- 3. Moisture Content*

· Frequency will be once per week for above items plus:

o Analytical Parameters

- 1. Proximate analysis*
- 2. Ultimate analysis*
- 3. Ash elemental analysis*

· Frequency will be once per month for above items plus:

o Analytical Parameters

- 1. Trace Metals Analysis*

Records of all parameters evaluated shall be maintained by the facility and reported to the Department monthly.

The facility shall evaluate the cause of any Non-Biomass content found and document any corrective measures taken.

Such an analytical evaluation will ensure that the prepared biomass feedstock, when converted into electric power by the Taylor process, will not produce emissions that exceed DEC standards.

Taylor invested time, energy, resources, and its accumulated wealth of market-based recycling experience to discuss the regulatory requirements, make sense from a New York State environmental and policy standpoint. In addition, the NYSDEC has provided an air permit for the Taylor project to operate under New York State clean air standards. The DEC permit issued for the TBE project calls for continuous emission monitors (CEM) to be in place and operational when the plant is on line, and the output records of the CEM to be available for continuous monitoring by the DEC.

Taylor's prime concern in this proposed rulemaking is that the proposed regulations permit anaerobic digestion but do not include other potentially equal or better technology processes such as the Taylor Biomass Gasification Process. Because the DEC is seeking to promulgate rules and regulations for potentially the next 15 to 25 years, the DEC should broaden the present regulatory scope of permitted processes to provide a fair and level playing field for other alternative innovative energy and biofuels technologies.

In comparing a landfill to a gasifier in the NYSERDA Biomass Power Guide in the NYS RPS the following statement is made about the conversion of biomass to a gas as part of anaerobic digestion.

"Landfill gas systems perform the primary conversion step in situ. The product is a biogas. No special program eligibility requirements are imposed on landfill gas projects that produce power onsite that otherwise meet New York State's general requirements."

Whereas under the RPS the landfill gets an automatic eligibility pass to use the off gases to generate renewable energy, the Taylor gasifier must sort out all the non-biomass elements leaving a clean

biomass fuel product, with associated inspections, gasification, and facility permitting as previously indicated.

DEC regulation should not follow this onerous punitive requirement contained in the Biomass Power Guide in developing new regulation and should so indicate that if permitting and emission standards are met that an aerobic digester, a land fill and a gasification system stand on equal regulatory footings.

As part of the comparison of gasification systems under the RPS to landfilling no mention is made of the estimated 60% of methane and other greenhouse emissions from landfill waste that have already escaped before a landfill is capped and closed so that only approximately 40% of landfill gas generated emissions are captured to produce electricity.

In balancing the comments expressed by national environmental groups that are very concerned about the use of municipal solid waste for any purpose, with the large scale landfill operators who want to maintain waste product import along with market share, if New York State is to meet Governor Cuomo's ambitious goals for new types of clean alternative electric power, for local renewable energy generation, for lower greenhouse gas emissions, and for generating 50% of the state's energy from clean renewable sources by 2030, it must give investors in and managers of new green technology power facilities one clear and practical set of rules and regulations that promote all forms of renewable alternative and innovative energy and biofuels technology not just landfills and other types of anaerobic digestion.

Under present RPS landfills are given a free pass to generate gases that have to undergo no special testing of incoming landfill materials, or which are compared to landfills where only unadulterated biomass was deposited. There is no upfront sorting, separating, or recycling of incoming landfill materials, counter to NYS policy initiatives. There is no reduction in volume of material placed in landfills, nor is there any wallboard removal, wallboard recycling generated, or mitigation in hydrogen sulfide gas creation when waste is landfilled.

The use of MSW as an alternative energy resource to produce biomass fuel, combined with a clean gasification step, incorporating DEC qualification of the facility as a Solid Waste Processing Facility, requiring a DEC Beneficial Use Determination (BUD) and fuel source pre-testing, and further assuring that the facility passes all DEC Clean Air emissions permitting requirements with continuous emissions monitors installed, and having a full-time DEC monitor of fuel input and DEC continuous emissions monitoring, insures that a reliable clean renewable energy process is established.

Taylor believes the State is truly committed to the development of clean, market competitive, renewable energy from an MSW product. The State sees such green energy development as continuing to reduce long haul truck traffic to remote landfills, promoting full waste stream recycling, creating good paying jobs (with compensation and benefits well above the minimum wage in New York), and meeting New York State's renewable energy, greenhouse gas, and energy efficiency goals.

The benefits of using organics/biomass in an environmentally friendly way, such as proposed by Taylor and permitted with testing by the DEC, include: well-paying job creation; reducing the cost to municipalities and local residential tax and rate payers for municipal solid waste disposal; reducing greenhouse gas producing landfills; keeping long haul truck traffic off the roads; reducing, reusing, recycling and recovering the energy content from solid waste; economic development benefits through growth of a viable business or businesses; maintaining New York State's leadership in innovative approaches to clean environment and energy production; reduction in greenhouse gas production; reaching 2030 State Energy Plan goals; providing a base load non-intermittent green energy supply and capacity into the NYISO electric grid market place; addressing major state and national waste disposal problems; fulfilling community desires to work for and contribute to local businesses. This business model potentially obtains one of the highest environmental standards when compared to other solid waste management methods using a complete life cycle analysis measurement.

The percentage of electric generation for 2014 in New York State by fuel mix was 609,293 MWh being provided by the use of biomass fuel. This amount could be increased by some 26% through the application of a single Taylor Biomass facility, adding to the State's fuel diversity and assisting in reaching the renewable energy goals proposed in the NYS Clean Energy Standard. Taylor is aware of a minimum of six locations in New York State that are in urgent need of a Taylor type solution for their waste management needs.

Waste generated issues are shunned by society, but society needs to address the reality of the massive amount of waste generated today. Society needs to adapt modern technology to assure a clean environment. If society can now envision cars that drive themselves, or instantaneous directions as to where you are at speeds over 55 miles per hour, or travel around the world on plush seats in ideal climatic conditions, cannot that same society develop and approve a clean energy product from waste? Cannot that society count on clean air emissions from systems that use those clean waste-generated fuel products? Taylor has spent years assuring that the answers to these questions are yes. Taylor now has to convince the State of New York that its Biomass Power requirements from waste products need to become less restrictive and punishing and more accommodating of clean new technologies for the ultimate goal of a cleaner environment.

In the opinion of James Taylor, Jr. who is providing these comments, and who has spent millions of dollars to help clean up the environment in Southeastern New York, for all the reasons explained in the comments provided above, it is time to encourage the use of carefully sorted and separated biomass from mixed waste streams in New York State and in the process create new sources of clean energy that the State needs to reach its renewable clean energy and solid waste goals.

Specific Taylor Comments Dealing with the Existing and Proposed New Rules and Regulations

As a result of past experience in seeking environmentally acceptable solutions to waste management practices Taylor offers the following additional comments for incorporation in the existing and proposed new rules and regulations:

1. Page 5 of 113 – Proposed Part 360

- a. #8 Alternative Fuels – We propose “Biomass prepared fuel (BPF)” be included at this time. It would be worded “Paper, fiber, food, leather, and wood (excluding pressure treated and painted) with gradation of 2” or less and may include small quantities of other organics including textiles and plastics (excluding PVC).

2. Page 6

- a. #20 Ash Residue. – This definition refers to a combustion process and does not accurately define a thermal gasification process such as Taylor’s permitted in NYS. We request a definition that includes “Char” the in-between state of carbon that has not fully transformed from a solid to a gas.

3. Page 7

- a. We request that a definition for “Biomass” and “Biomass Prepared Fuel” be developed and incorporated. Taylor suggests consideration of “biomass” defined as: “paper, fiber, food waste, leather, textiles, wood excluding pressure treated and painted wood; separated and removed by manual labor or mechanically from MSW, C&D, waste-wood.”. “Biomass prepared fuel” be defined as: “paper, fiber, food waste, leather, wood excluding pressure-treated and painted wood (BIOMASS); separated and removed by manual labor or mechanically from MSW, C&D, waste-wood.

4. Page 9

- a. Char -- We request that a definition for “Char” be incorporated as offered; “the in between state of carbon when transformed from its solid state to its gaseous state by oxygen starved pyrolysis technologies.

5. Page 9

- a. #49 Combustion – this definition should be furthered clarified to read: “which uses high temperatures and oxygen....” The word “and” should be changed to read “which uses high temperatures with oxygen as its primary process.”
- b. Combustion processes use a flame to change the chemical, physical, or biological character or composition of the waste. They are typically fueled by a fossil fuel or a chemical reaction fuel gas recirculated. This definition should provide for and differentiate for “Non-flame” type heat transfer technologies such as the Taylor thermal gasification process.

6. Page 14

- a. #98 Excluded Waste – The products of source-separated yard trimmings, source separated recyclables, and source-separated food scraps should be allowed as a biomass prepared fuel(BPF) when used as a waste derived feedstock to produce alternative and innovative renewable energy products or alternative innovative fuel and transportation products. The Governor’s 50% renewable energy requirement by 2030 will require all of the biomass available to help ensure our striking that goal. This is especially true when landfills are not prohibited from accepting biomass waste. This does not appear to be fair and equal treatment, nor

appropriate sound environmental policy for future alternative innovative energy products.

7. Page 16

- a. #118 Gas Recovery Equipment - There should be further definition here to include “gas recovery equipment” beyond transporting “landfill gas” only.

8. Page 16

- a. #120 – Gasification – there should be clarification added to the term gasification. There are several different types of gasification technologies in this definition and they are all lumped into one category even though they are distinctly different. Please see “Attachment A”. They include: “fixed bed gasifiers” such as “air or oxygen blown updraft” or “air or oxygen blown downdraft;” or “fluid-bed type gasification” either “air or oxygen blown;” or “entrained-bed gasifier” either “air or oxygen blown;” in all of these methods, the thermal heat necessary for gasification is provided by “burning/combusting the feedstock within the reactor.” Air-blown gasifiers produce a gas with an energy content typically in the range of 150BTU/scf (3.5-7 MJ/Nm³). Oxygen blown technologies produce a gas with an energy content typically in the range of 300BTU/scf (7-15 MJ/Nm³). Indirect gasification technologies do not combust the waste feedstock with oxygen and use a heat transfer medium or other heat exchange method to provide the heat required for gasification. The resulting product gases will have an energy content in the range of 350-500BTU/scf (13-20 MJ/Nm³).

9. Page 17

- a. #132 Gross Contaminants – Do not appear to read as the proper words. In litigation the word “Gross” means many, numerous or large. The simplistic word for this use should refer to “residues.” Residues could include “inorganic household waste” (HHW) or unidentifiable.
- b. #146 – Inert Material – this definition should be expanded to include the non-putrescible ingredients from MSW, commercial waste, C&D and waste-woods. This could include the inorganic fraction defined earlier and should all be recyclable.

10. Page 20

- a. #164 Manufactured Home – Demolition, renovation and alteration, manufacturing debris should be named C&D waste other than the MSW biomass fractions.
- b. #169 Metal Processing and vehicle dismantling facility – Metal processing is not necessarily a vehicle dismantling facility. It appears these should have two different definitions to allow for metal processors that are not vehicle dismantling facilities. Metal sorted and separated out of C&D, MSW and commercial waste and wastewood should be specifically deleted from this definition.

11. Page 21

- a. #172 Mulch – should be expanded to included wood derived from any unadulterated sources such as currently included as part of wastewood and should include wooden pallets, wood cable spools, C&D wood from floor, wall and ceiling joists.

- b. #175 MSW Processing Facility – This definition should be expanded to include a biomass prepared fuel (BPF) for those technologies that are not a combustion process technology, such as Taylor.

12. Page 22

- a. #179 – Municipal Solid Waste (MSW) – MSW & C&D should not be legally allowed to be commingled at a future date certain. Both of these waste-streams have organic biomass ingredients and recyclables within. The new regulations should encourage and eventually require these waste streams to go to a recycling processing facility where all organics and recyclables should be removed prior to landfill acceptance.

13. Page 23

- a. #183 Operating Cover should include C&D ADC materials if NYS is going to encourage new C&D recycling developers to grow and expand.
- b. #186 Organic Materials – should be cross-referenced to include Biomass prepared fuels (BPF) as a feedstock for innovative alternative energy technology that will help fulfill the Governor’s 50% renewable electricity requirement by 2030.
- c. #188 Organics Processing Facility – This definition should be expanded to include new facilities designed specifically to take in MSW C&D and waste wood (WW) feedstocks to prepare a specified biomass feedstock that will provide fuel for a new technology that will produce alternative and innovative energy products that will supplement and support the Governor’s 50% by 2030 alternative energy mandate. There is no definition for a “Class A” process.

14. Page 25

- a. #208 Pulverized – Unaided visual observation should be capped at 2” or larger.
Today’s mechanical sorting and separating technology can identify particles down to $\frac{3}{4}$ ” inch-size.
- b. #209 Putrescible – uncontaminated wood and paper can be putrescible and should not be exempted.
- c. #214 Recognizable – should be capped and should be legally binding as 2” plus which is visually recognizable unaided.

15. Page 26

- a. #218 Recyclables Recovery Equipment – The last words “other than energy recovery” should be deleted as that is neither accurate nor attainable. Sorting, separating and recycling equipment lines are designed today to allow for the removal of recyclables, and can include unidentifiable (from $\frac{3}{4}$ ” to 2” minus), as well as prepare the remaining feedstocks as a biomass prepared fuel (BPF) which will result in a new recycled product called “green energy products such as fuel, Fischer-Trops chemicals, and renewable base load electricity.”
- b. #219 Recyclables Recovery Program – These currently proposed definitions appear to be not fully supporting “energy recovery.” If favoritism is not to be legally allowed, then biomass gasification should be added to the list of favored uses.
- c. #220 Recycle – Supporting of biomass gasification thermal treatment and other disruptive, alternative technologies should be promoted especially in light of new environmentally friendly technologies starting to become commercialized.

Landfills and anaerobic digestion appear to be the favored future technologies for NYS for the next 20 to 30 years or until the next rewrite of these regulations. The definition of “recycle” also goes on to prohibit “the use of waste as a fuel substitute or for energy production alternative daily cover or within the footprint of a landfill.” This new stipulation prohibits all of the C&D recycling that includes ADC manufactured as an engineered specification product by recycled commodity manufacturers. C&D facilities will be severely damaged if ADC is not allowed to be counted as a recyclable product instead of using natural soil products from new mining sites. C&D businesses spent millions of dollars for the latest and newest technologies to remove recyclables and create new products in accordance with existing law, rules and regulations. However as a quick rule of thumb this entire recycled commodity product revenue equates to approximately 10% of the C&D facility sales revenues when commodity pricing is good. Future profits for C&D processing facilities will come from reduced tipping fees for manufacturing and producing landfill ADC via that same C&D recycling processing line. These sorting, separating equipment lines create hundreds of unskilled and semi-skilled labor positions annually. The proposed regulations create additional hardships for the only true mixed waste recycling facilities that are creating hundreds of jobs in New York State. Worse yet, this proposal appears to benefit landfills and anaerobic digesters rather than offer incentives to mixed waste processing facilities and provides minimal incentive for recycling research and development and demonstration. It is not sound environmental policy to continue placing biomass in landfills for degradation to occur that only produces a

synthesis/fuel gas after more than half of the toxic emissions of methane and other greenhouse gases have escaped into the environment, and less than half get captured and fed to a turbine to make dirty-sourced electricity. This is very similar parallel to the environmental logic for why we should not use dirty oil to generate electricity and alternative and innovative fuels. A further deterrent is the large land area required for a landfill operation thereby limiting viable locations for landfill siting and continued long-haul trucking required to get to distant or out of state-landfill's.

- d. #222 Refuse-Derived Fuel (RDF) – Currently described as waste feedstock that is residential MSW picked up curbside by waste handlers; delivered to a RDF combustion plant, dumped on a tipping floor and then feed into a flame burning combustion process. At some RDF facilities magnets are installed before and after mass burning to remove the metal contents from the resultant ash. Metals being one of the most profitable recyclables other than cardboard and paper. Waste feedstock should be permitted or another term developed such as biomass prepared fuel (BPF) that would provide clarification that provides the distinction term “refuse-derived fuel” does not include or represent biomass prepared fuel (BPF) waste that goes through a extremely capital cost intensive, labor intensive sorting, separating and recycling equipment lines which remove all recyclables, unidentifiable objects ¾” or smaller, and all inorganic materials like glass and metal that go to recycling, before the remaining biomass is placed into an alternative, renewable energy technology process. It should be noted again that

RDF combustion facilities, landfills and anaerobic digester processes do not provide this kind of upfront environmentally enhancing recycling concept.

16. Page 30

- a. #257 Storage Area – Recycled aggregates (asphalt, brick and concrete) require longer than 12month storage capacity time. Storage time can easily run into two consecutive operational years.
- b. #263 Thermal Treatment – anaerobic digesters should not be exempted from the terms and conditions required of thermal processes. Such exemption reflects that landfills are the preferred disposal method in NYS, and are being given a free ride that is passed along to anaerobic digestion. This equates to producing dirty electricity from dirty gas. Landfills and anaerobic digesters are not held to the same standards as other thermal technologies that sort, separate and remove recyclables, must recycle even if not profitable, and produce clean electricity from clean gas. This disadvantages environmentally concerned businesses that are attempting to do the environmentally proper thing, while regulations allow combustion and landfill gasification technology with much higher greenhouse gas emissions. This logic makes no environmental sense.

17. Page 82

- a. Section 360.20 Environmental Monitoring Services. All NYSDEC solid waste permitted and registered facilities should be required to maintain and pay for a NYSDEC environmental monitor services employee. All permitted facilities should be inspected under the supervision of the regional solid waste director and administrator. All registered facilities should pay for and be inspected quarterly

by an environmental monitor. Small and medium sized facilities are not monitored regularly and are the sites that avoid the environmental review process and cause pollutions incidents that are not good for the environment.

18. Page 59

a. Section 361-5.2 (a), (1), (2),(3),(4),(5),(6)

Registered Facilities; This section exempts smaller facilities from permitting requirements, environmental monitoring and allows registration permits for receiving 250 tons per day and with no annual restriction cap. This minimally regulated facility should be capped at no more than 100 tons per day as many other states have already done if NYSDEC were to stick with tonnage measurement requirements. Most if not all of these types of minimally permitted facilities have a certified weight scale or a licensed certified weight-master. Therefore, tonnage restriction regulatory monitoring is not enforceable or defensible. At registered facilities and there is no certified weight-scale or licensed/certified weight master these type facilities should be limited to no more than 12,500 cubic yards per year. This is a unit of measurement that can be regulated and/or enforced. In the event a certified weight scale and a licensed weight master is part of the facility site the registered facility be authorized to accept no more than 100 tons per day and not to exceed 25,000 tons per year (TPY). 25,000TPY facilities should pay for and be environmentally monitored by an environmental monitor at least quarterly. These small to medium size exempt or registered facilities become a major source of all environmental complaints and actions in NYS.

19. Page 60 of 74 – Proposed Part 361

- a. Section 361-5.4(f) Storage Requirements (1)(i) – asphalt pavement, concrete and other masonry materials, regarding storage times: 180 days is insufficient storage time for large processing facilities. Aggregate finished products that are engineer specified for projects can take as long as three years. This includes from project being designed and awarded a contract, contractor sourcing and preparing the materials, and the project being constructed and able to receive the finished aggregate products.

20. Page 61 of 74 – 361-5.4(f)(iii)

- a. NYSDEC Storage pile size should differentiate between organic/flammable/combustible waste stream products and non-organic/non-flammable or noncombustible waste streams. Said differently possibly; putrescible versus non-putrescible wastes products. These two totally opposite feedstocks have differencing reasons relating to storage pile and size requirements. This proposed regulation requirement inadvertently impacts numerous other non-solid waste businesses such as within the construction industry. Impacting products such as blacktop millings and brick and/or concrete aggregates. Non organics such as asphalt, brick and concrete, virgin raw product versus recycled product are not as concerning to NYSDEC and local government from an environmental, fire and odor concern. The primary concern for non-organics is related to employee, equipment and operations safety thru Department of Labor OSHA safety regulatory requirements and owner's insurance company requirements. These pile sizes should include local government zoning

requirements initially and secondly a set ratio percentage of space per square foot or acre including the usable acreage size of facility and parcel available for storage. Smaller facility parcels dictates much smaller storage requirement allowances than larger parcel size facilities.

b. Conversely organics/putrescible/flammables have a totally opposite consideration.

Odor and fire and facility through-put being the most significant concern for the public at large. These flammable/combustible products require smaller dimensions and foot prints as well as additional restrictive standards than that of non-organic/biomass, non-flammable and non-combustible feedstocks and facilities. Organics/biomass processing facilities receive raw and recycled organic/biomass products. The facility then further processes these organics into final finished product to be marketed. Equally important is these various stages of product manufacturing/processing. For wood processors there is the raw material, primary ground material and secondary ground product. Each stage of this material processing has different levels of fire and odor concern issues. The raw product stockpile height and foot print dimension can be larger than the primary ground height and footprint dimension. Whereas the primary ground height and foot print dimension can be larger than the secondary ground product.

perspective. Each of the three phases of manufacturing has a different threat level and exposure for fire and odor. The second ground wood product pile size is the most concerning for fire and odor concerns. Again local government zoning regulations such as setbacks, accessory use approvals for outdoor storage, parcel size, all have sizing impacts for a properly fitted facility. Storage requirements are

not as simple as one size fits all. Each project facility has very specific site restrictions.

21. Page 3 of 26; Proposed Part 362 Combustion Facilities and Thermal Treatment Facilities

- Subpart 362-1.1(a). There should be a separate legal classification for all thermal technologies that do not use combustion of municipal solid waste. Please see “Attachment A” for different types of gasification technology. Providing favoritism to a dirty-sourced feedstock and allowing anaerobic digestion processes a less rigorous regulation is not good environmental policy and invites many questions. Why in this day and age would we be supporting and encouraging placement of organics/biomass into landfills? These proposed regulations should be providing advantage and incentive to any and all disruptive, innovative and alternative energy product technology that can create environmentally friendly green products such as renewable energy or green transportation fuels from waste feedstocks under careful greenhouse gas emission regulation. We should not be placing organics/biomass into landfills to rot and decay for a future process such as anaerobic digestion, then capture a minor portion of the greenhouse gases while the majority of gas escapes into the environment. Sending organics to an environmentally enclosed facility that can immediately convert organic waste-stream ingredients into a clean energy product almost within the same week they are delivered as a waste product is a much better future practice for all New Yorkers. Landfill space is getting more and more scarce and precious every day. We are becoming more and more dependent

on long distance or out of state transfer of our waste. These last remaining NYS landfills are getting more and more expensive especially in light of the few open remaining choices. There has been a significant change in ownerships of landfills in 2016. New York City must immediately start looking for an out of state landfill to take 4,000 tons per day in today's marketplace. We need more choices and more waste management resources. Anaerobic digesters are not the cleanest solution and should not be given a free pass, especially in light of equal or better, more sustainable environmental solutions. This type of approach and practice kills any possibility for further mixed waste processing facilities in NYS. These types of facilities can provide numerous jobs for entry level positions, semi-skilled equipment and vehicle operators and drivers to highly skilled mechanics, plant operators and management employment. These facilities also bring huge economic development opportunities to a community as well as a significant tax base as well.

22. Page 9 of 26

- a. Section 362-1.5 Design and Operating Requirements; (8) Source –Separated Recyclables – This requirement should apply to all registered and permitted solid waste disposal facilities.

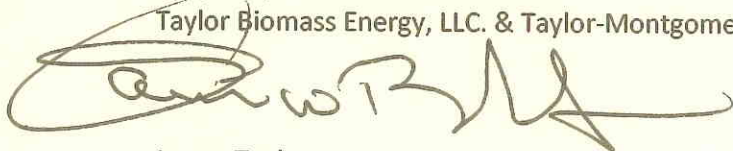
23. Page 12 of 26 Proposed Part 362-2 MSW Processing Facilities

- a. 362-2.1 Applicability. Biomass Prepared Fuel (BPF) should be a definition included in this section. BPF is engineering technically and legally different product than RDF. RDF is MSW that has been picked up curbside, delivered to an RDF combustion type technology plant, dumped on a tipping floor, fed to a

combustion type technology process and burned. No upfront processing or recycling occurs. This combustion process produces a contaminated colored ash residue. This ash residue typically contains organic fraction that has not had all of the carbon elements combusted and removed, inert/non-organic material and household hazardous waste products. Different from a landfill or a combustion process, biomass prepared fuel (BPF) has been sorted, recyclables have been removed, and unrecognizable sized ingredients (Fines) typically 2" (2 inch) down to 3/4" (inch) dependent on the facilities equipment, have been removed, and the remaining organics fraction has been segregated and processed into a 2" minus (or smaller size gradation) biomass prepared fuel feedstock. Biomass prepared fuel does not technically or legally have the same definition or engineering parameters as refuse derived-fuel (RDF) and must be recognized and regulated differently in any new proposed rules and regulations upgrades. Additional increased environmental clean-up of the waste stream deserves being treated differently and appropriately, otherwise why would anyone make the additional investment in increasing their costs and reducing their profits?

24. Page 13 of 26 Section 362-2.3 Design and Operating Requirements (b) Source-separated Recyclables – This section should be reworded to coincide with page 9 of 26 (8) Source-separated recyclables requirement(s).

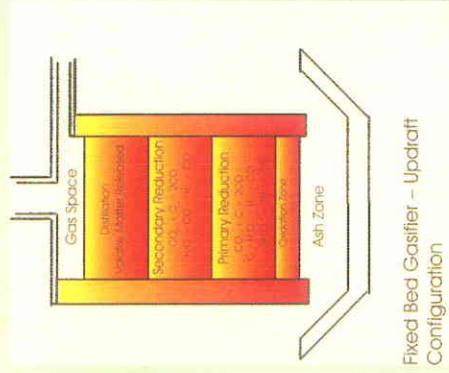
Very truly submitted on behalf of:
Taylor Biomass Energy, LLC. & Taylor-Montgomery, LLC

A handwritten signature in dark ink, appearing to read 'James Taylor, Jr.', is written over a horizontal line.

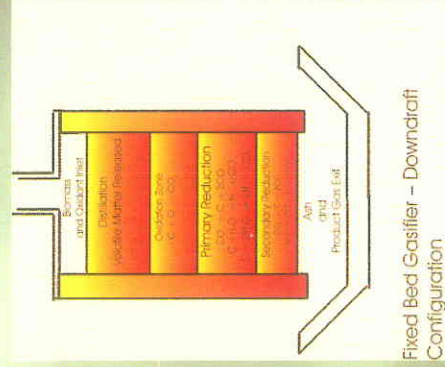
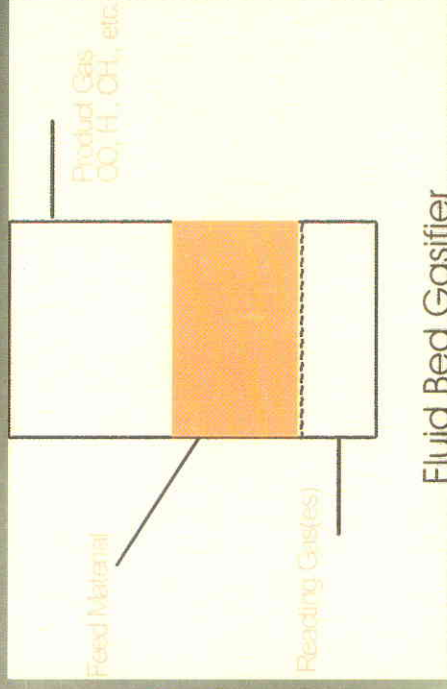
James Taylor, Jr
President & CEO

ATTACHMENT "A"

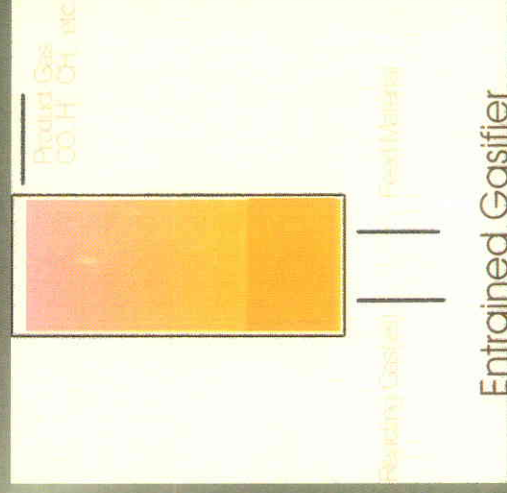
Types of Gasifiers



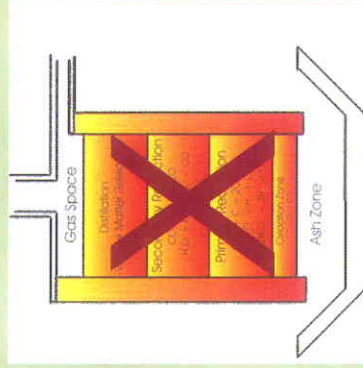
All can be either “air” or “oxygen” blown



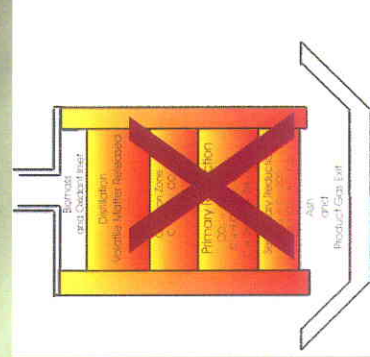
Heat provided by “burning” within the reactor



What is The Taylor Gasifier?

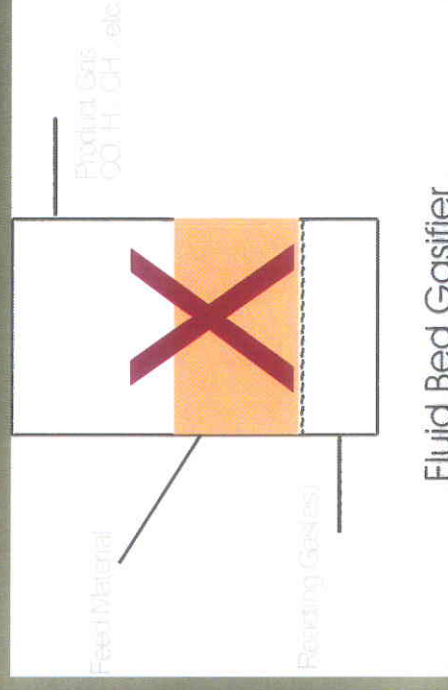


Fixed Bed Gasifier – Updraft Configuration

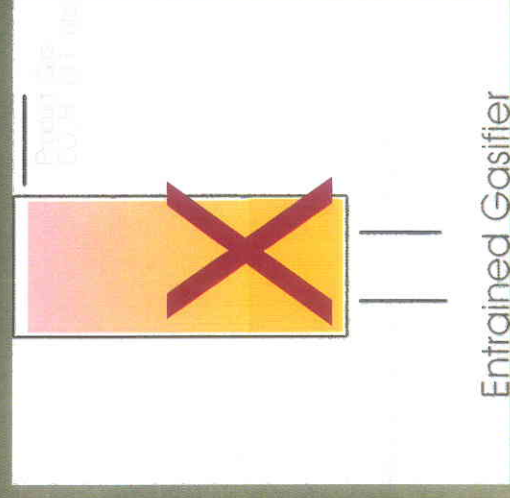


Fixed Bed Gasifier – Downdraft Configuration

None of These



Fluid Bed Gasifier

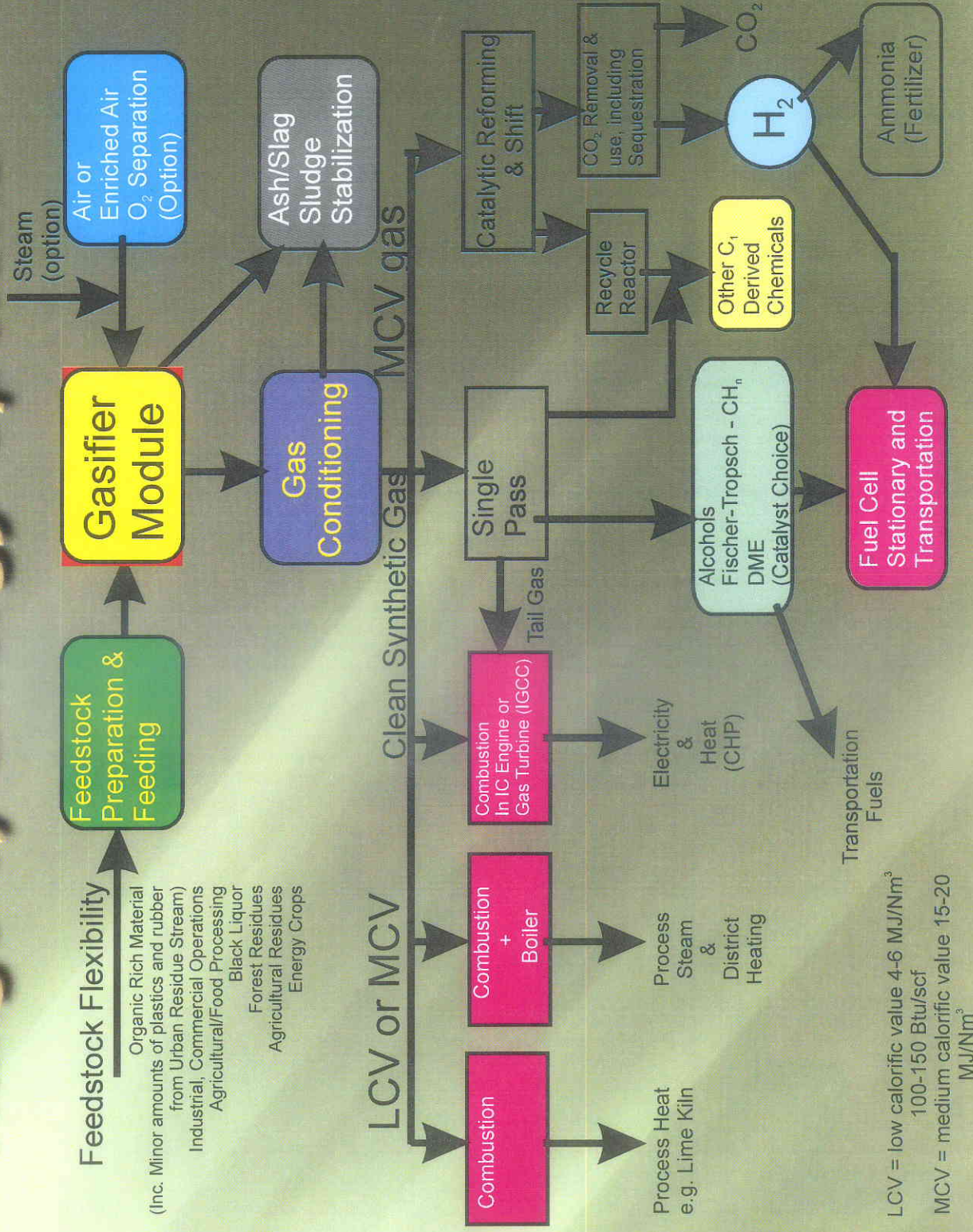


Entrained Gasifier

Types of Gasification Systems

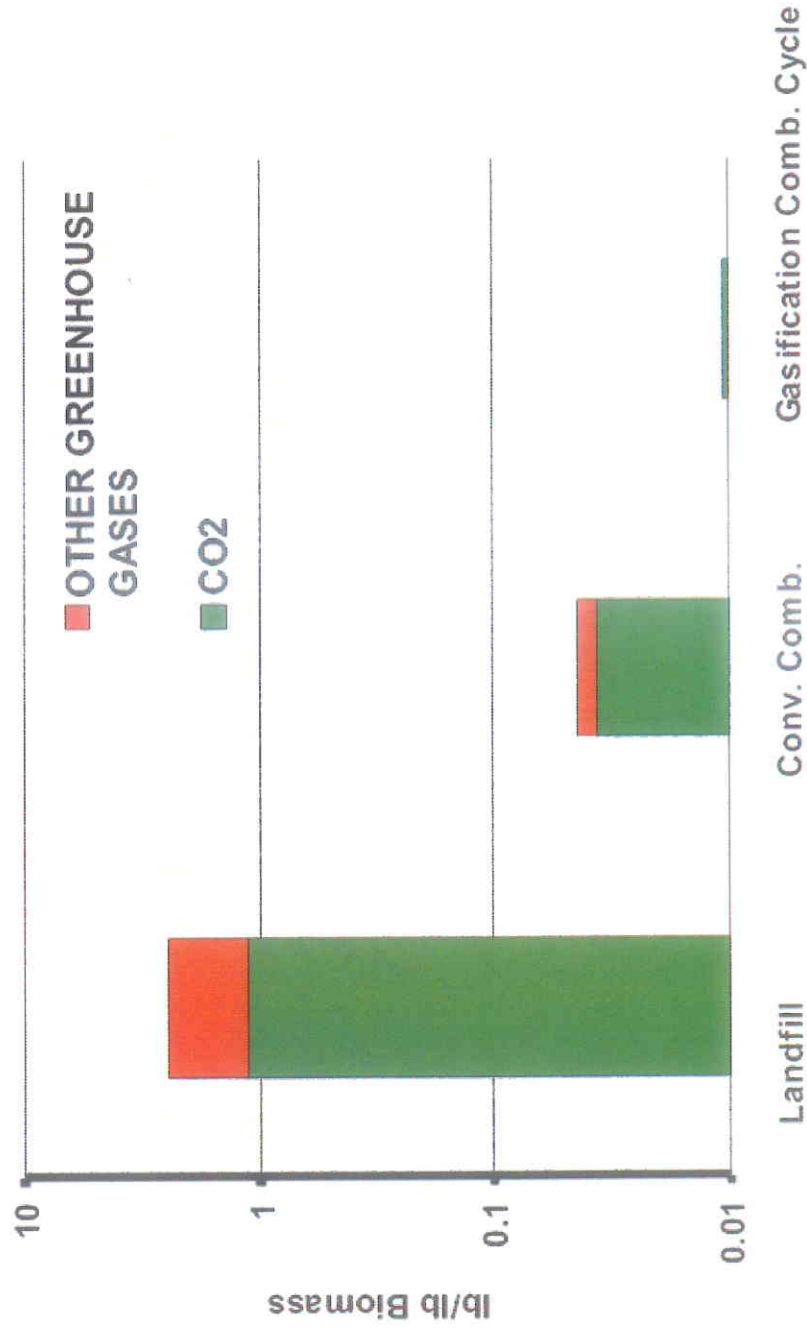
▣ Air blown	--	~150 Btu/scf (3.5-7 MJ/Nm ³)
▣ Oxygen blown	--	~300 Btu/scf (7-15 MJ/Nm ³)
▣ Indirect (Taylor Gasifier)	--	~350-500 Btu/scf (13-20 MJ/Nm ³)

Gasification to MCV Gas = A Wide Range of Energy Options

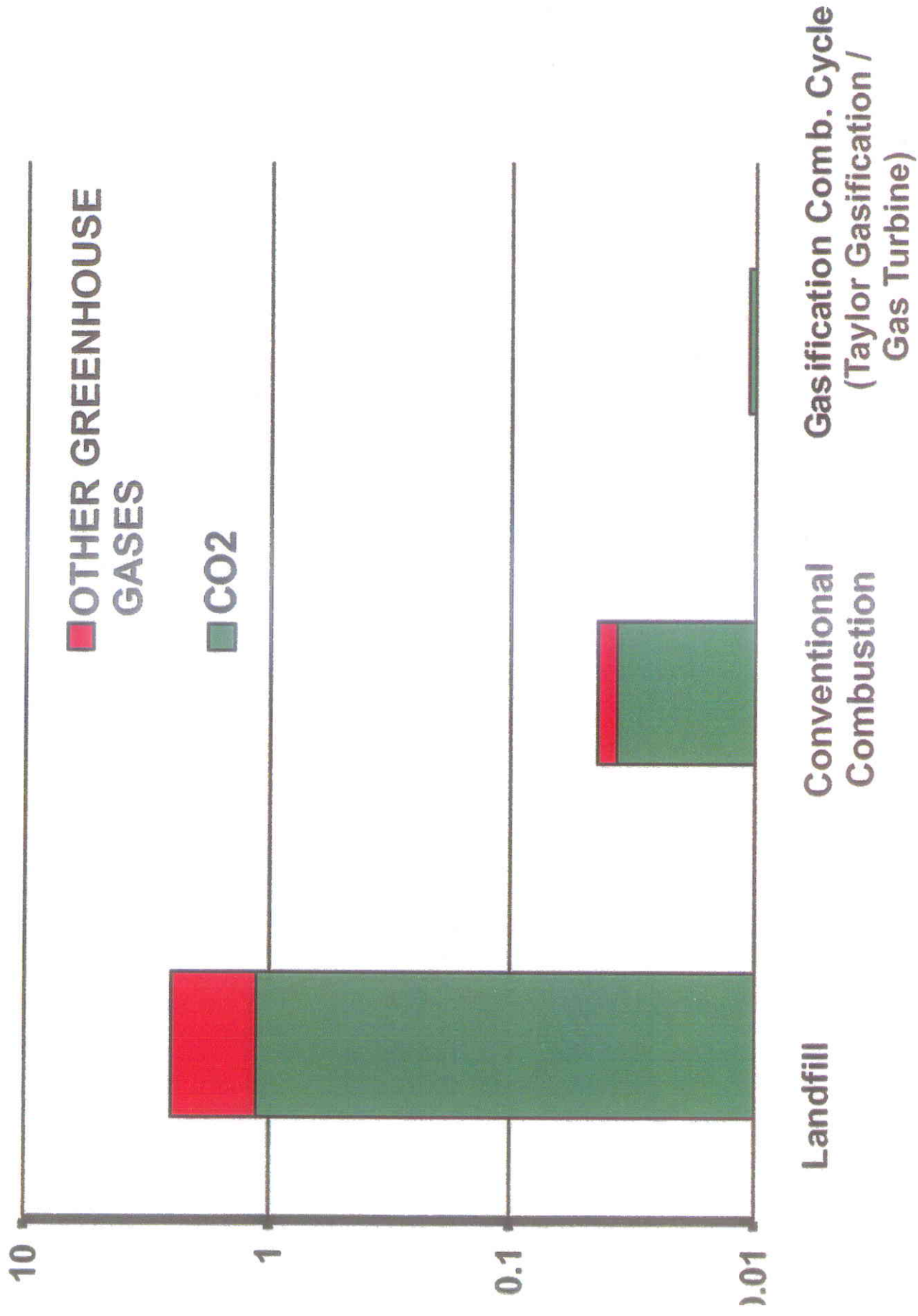


Eliminating Landfill Disposal Provides Substantial Greenhouse Gases Reduction

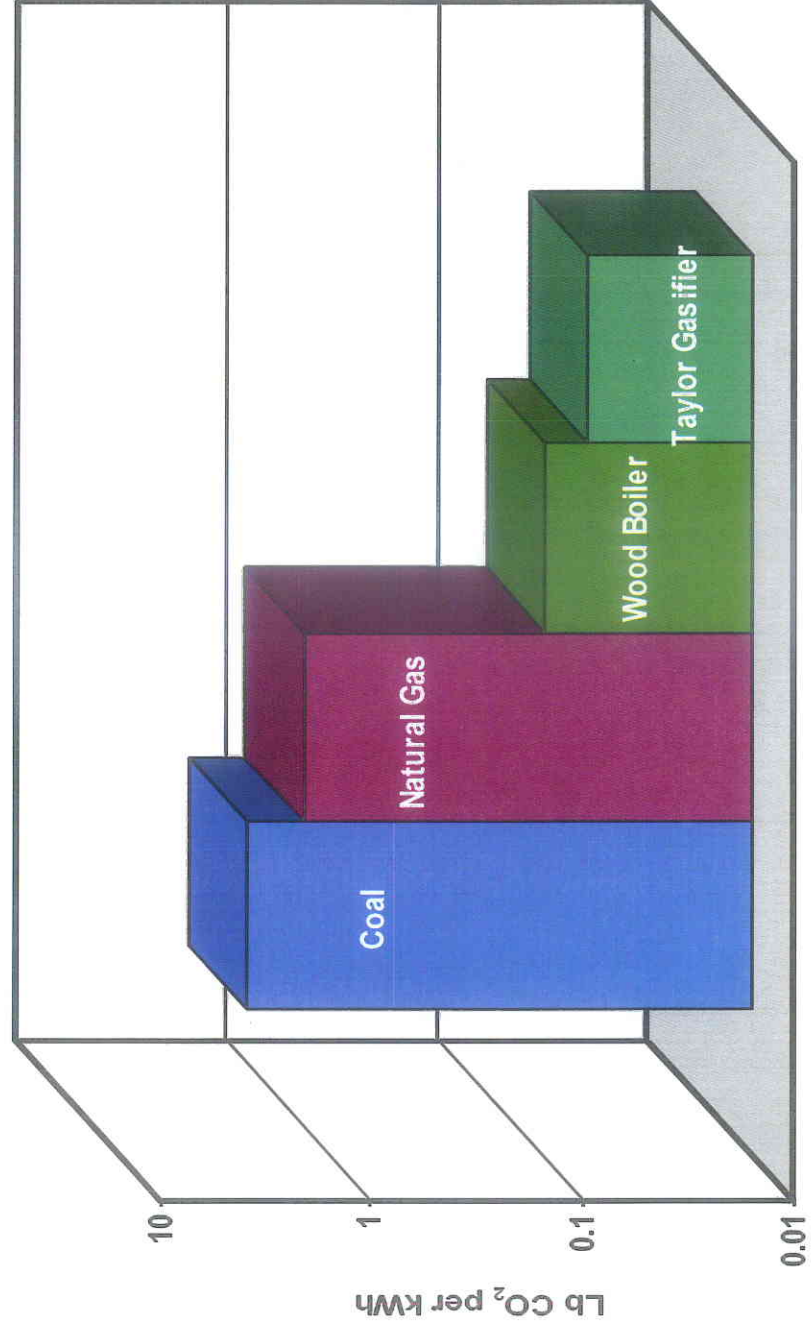
GREENHOUSE GAS EMISSION COMPARISON



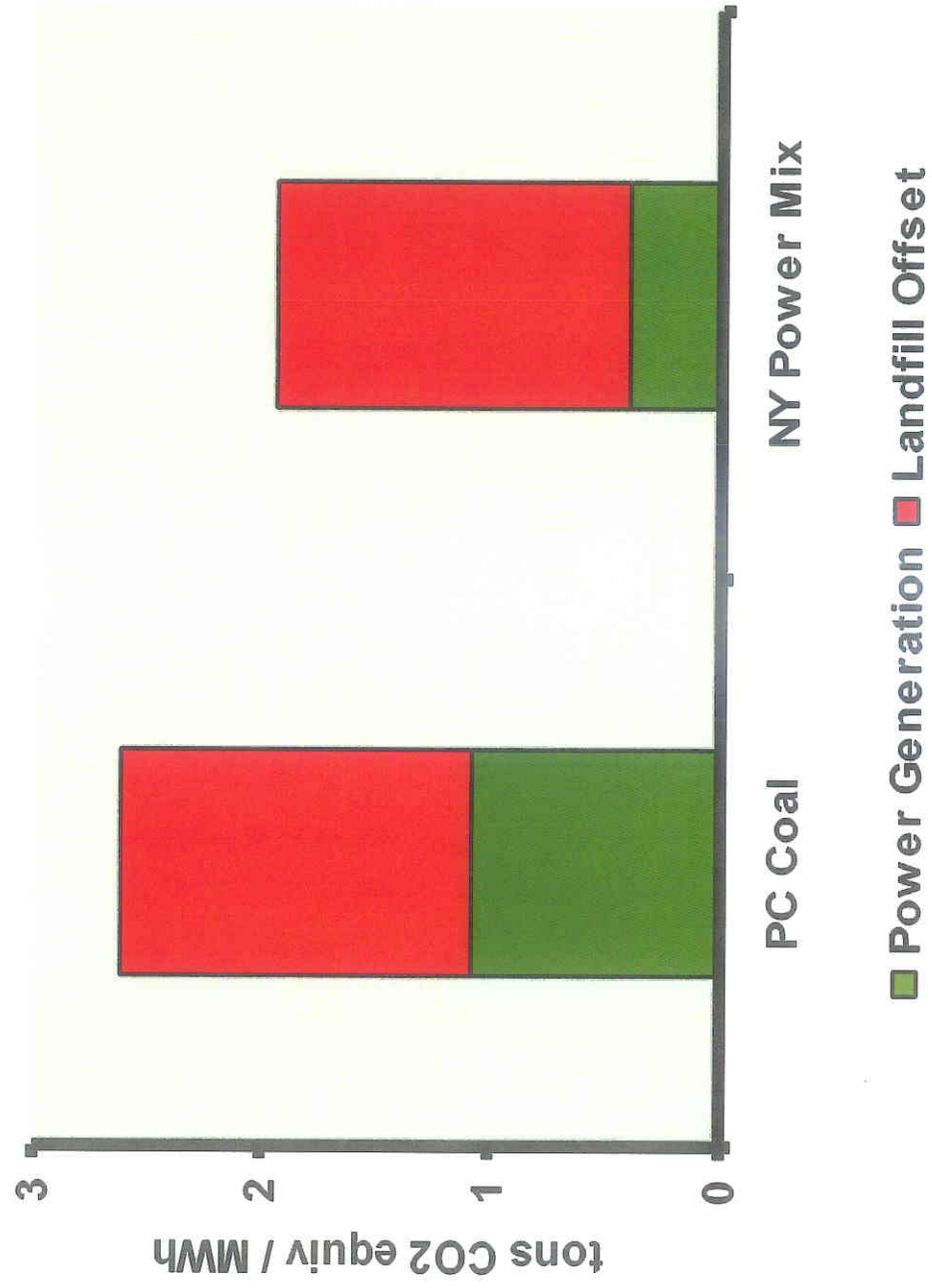
GREENHOUSE GAS EMISSION COMPARISON



An Effective Way to Reduce Greenhouse Gases



CO₂ Offsets Are Substantial



Sustainable Power Can Be Achieved

