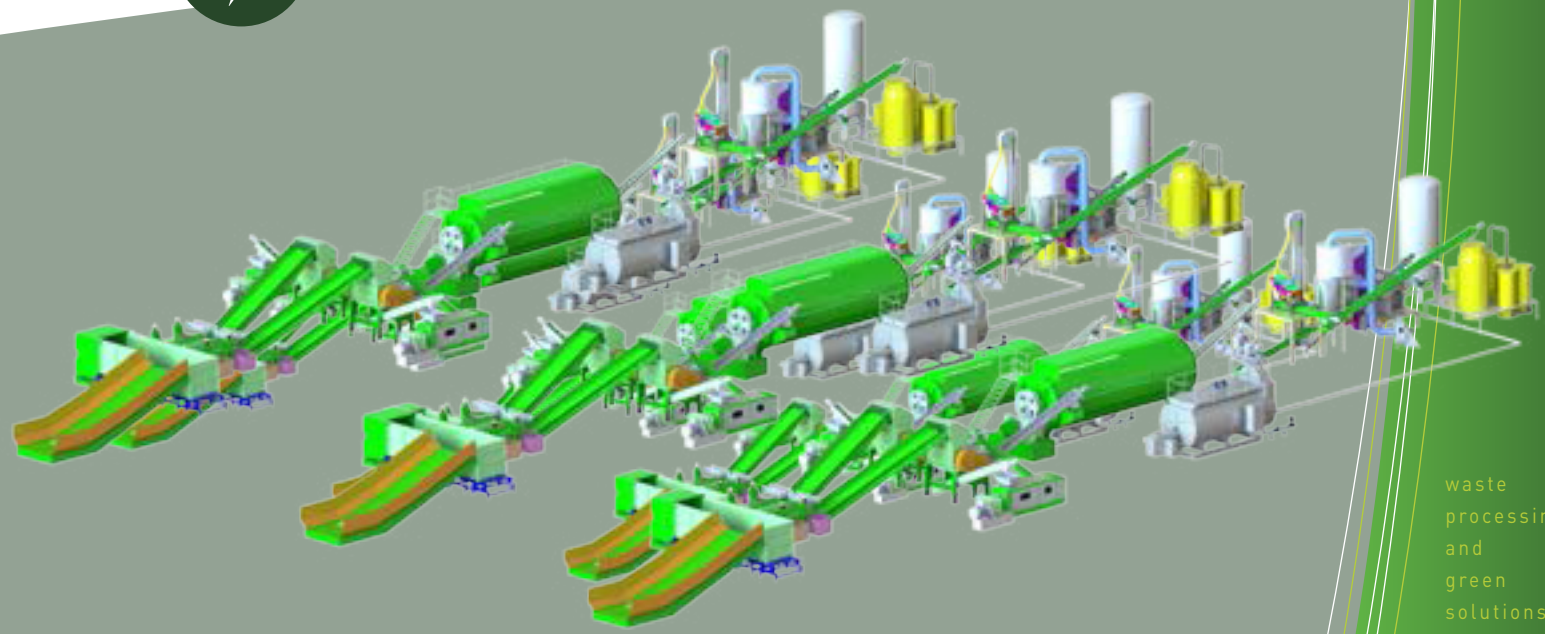
green FUTURES

GEODYN™

Zero Municipal Waste Solution

true ZERO EMISSIONS



waste
processing
and
green
solutions

ZERO MUNICIPAL WASTE

GEODYN™ started with a simple goal. Eliminate the need for landfills by developing a system that efficiently produces marketable products from all types of solid waste. The result is our Total Waste System and our Organic Waste Processor.

Both systems start with shredders featuring a proprietary design, created from the ground up. No shredder on the market can produce uniformly sized material quicker or more consistently than GEODYN™ system. Tested on the toughest materials (palm fronds and plastic sheeting), our shredders can process up to 15 tons-per-hour

to uniform sizes of 50 millimeters or less. This is vital to the process as a small uniform size allows our system to quickly kill bacteria, viruses, and odors.

We then use a proprietary press to remove liquids for treatment to irrigation water standards. The remaining solids then travel to the processing unit. If you have organic waste, our Organic Waste Processors can turn this material into animal feed, fertilizers, or clean-burning energy pellets in under 30 minutes at rates up to 42-tons per-hour. If you have trash, the same bacteria/virus/odor killing process creates energy pellets of 8,000+ BTU in our Total Waste System. Pellets from both systems create electricity at a rate of 1 megawatt per-ton or more.

TURNING TRASH INTO TREASURE™

EMERGING TECHNOLOGY TRANSFORMING TRASH INTO RENEWABLE ENERGY

All nations must deal with concentrated urban populations and isolated rural communities. GEODYN™ has the only technology that works well on both ends of the population spectrum. Our systems fit into a surprisingly small footprint (100 ton-per-day systems require less than 300 square meters), which allows deployment of this technology in crowded urban areas. With system-sizes ranging from 1 to 42 tons-per-hour, these systems can also be strategically placed where trash is generated. The ability to effectively size systems would also facilitate placement of closed-loop systems to create electricity from trash generated in rural areas with small populations.

In urban, rural, or suburban utilization GEODYN™ systems eliminate the costs and environmental issues associated with landfills. In addition, our systems provide the following benefits:

customizable solutions for global waste management

- Reclamation of 50 gallons of irrigation water per ton processed.

- The creation of clean/renewable electricity through use of our pellets and SynGas systems (up to 1.2 megawatts per-ton).

- Dedication of organic wastes to produce animal feed and soil amendments/fertilizer to support growing agricultural needs.

- Ability to turn all current waste material into useful and sustainable products.

- Elimination of long-distance transportation costs and deter illegal dumping.

Placement in population centers is safe since our process has zero harmful emissions. We don't burn waste in our process. We rapidly heat it using a proprietary radiant-heat process. The only emission is water vapor. Similarly, SynGas units create fuel through a zero-emission process. The only emission is in the ultimate creation of electricity, through the use of an internal combustion engine.

Press
Cooker
Dryer

GEODYN™ systems are designed for ease of use so no specialized training is required for efficient operation. We also utilize various remote sensors that allow us to help local operators keep their systems running at peak efficiency. Our systems are designed to run 12 to 20 hours per day, thus capital costs are only a fraction of comparably sized anaerobic digestion or incineration systems. Our process is also more efficient as there is no wasted or unusable material left after processing.

Processing
System
Overview

Under
30
minutes
at rates
up to 42
tons per
hour

TRUE ZERO WASTE SOLUTONS

IMAGINE ALL THE BENEFITS - SAYING "GOOD BYE" TO LANDFILLS

TIME – Our ability to quickly size and process all waste types into marketable products in less than 30 minutes is unmatched.

SIZE – Our systems fit into the smallest per-ton operating space. They can also be sized to accommodate small local or larger regional needs.

ENVIRONMENTAL PROTECTION – Ours is the only system that eliminates all harmful bacteria and viruses in minutes, through a zero-emission process. Our unique ability to control moisture enables processed material to burn 300% more efficiently that waste-to-incineration systems, thus producing none of the harmful toxins associated with incineration.

Lower the Carbon CO_2 Footprint Globally

QUALITY AND VARIETY OF FINISHED PRODUCTS– Our pellets generate 1 to 1.2 megawatts of electricity per ton. Use of chillers prevents our pellets from degrading. Animal feed and soil products are 100% free of harmful bacteria, thus they require no "maturation" period and are safe to use right from our machines.

Green Global Solutions
for any waste management need

ZERO WASTE – Not only do we eliminate landfills (one definition of "zero waste") we also create marketable products with no residue to be discarded or requiring further processing to reach a useful or safe state.

DEPENDABILITY – Our shredders run cool and at low rpm's (600). Our processor and press at less than 30 rpm, thus no premature wear of internal components. Radiant heat does not touch the processed material and creates no pressurized chambers so our system can be safely opened during operation and easily cleaned after operation. Finally, we have kept moving parts to a minimum and don't require any computerized controls to operate.

In summary, GEODYN™ systems are uniquely qualified to solve any and all solid waste issues the world.

Additional
Patents
Pending

Comparison of different fuel types

	Item	Coal	Diesel	Natural Gas	Pellet
1	Heat Value	5000 (Kcal/kg)	10200 (Kcal/kg)	8700 (Kcal/m3)	4500 (Kcal/kg)
2	Boiler Efficiency	74%	88%	88%	80%
3	Density (kg/m^3)	1100-1400 (kg/m^3)	830 - 860 (kg/m3)	0.74 (kg/m^3)	980 (kg/m^3)
4	CO_2 (.kg/kg)	1.78	3.06	1.96	0
5	SO_2 (g/kg)	0.5%	0.25%	-	0.07%
6	NO_x (g/kg)	2.94	3.67	1.87 (g/m3)	1.02

Pellets:

Stable
Dry
Transportable
Energy

Factory floor

Patented technology combined with customized solutions

Qualitative Comparison : GEODYN™ Systems vs. Traditional Waste Management Systems

	Technology	By Product	Capacity	Processing Time	Pathogen Free End Product	Odor Free End Product	Humidity Control	Indirect Heat Controlled Cooker	Indirect Heat Controlled Drying	Pelletizing Option	High KCal Output	Liquid Separation / Filtration	Heat Source
1	GEODYN™ organic waste processing	Feed, Fertilizer, Syngas, BioChar, and Water	Up to 42 TPH	21minutes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Indirect dry steam
2	In vessel composting system	Compost	75 Tons	4 - 7 days	No	Yes	No	No	No	No	No	No	None
3	Tunnel composting	Compost	Various	7 - 30 days	No	No	No	No	No	No	No	No	None
4	Dry fermentation digester	Bio-Gas	Various	21 - 28 days	No	No	No	No	No	No	No	No	None
5	Tunnel Composting	Compost	Various	7 - 30 days	No	No	No	No	No	No	No	No	None
6	In vessel composting system	Compost	40 - 50 Yds	14 - 21 days	No	No	No	No	No	No	No	No	None
7	Biomass pyrolysis	BioChar, SynGas	2 - 4 TPH	2 - 4 TPH	Yes	Yes	No	No	No	No	Yes	No	In vessel heating
8	Plasma Waste Disposal	SynGas	10 - 500TPD	?	Yes	Yes	No	No	No	No	Yes	No	Plasma
9	Dehydration System	Dehydrated Food Waste	110 - 220 lbs./Day	12 - 18 hours	No	Yes	Yes	No	No	No	No	No	Electric

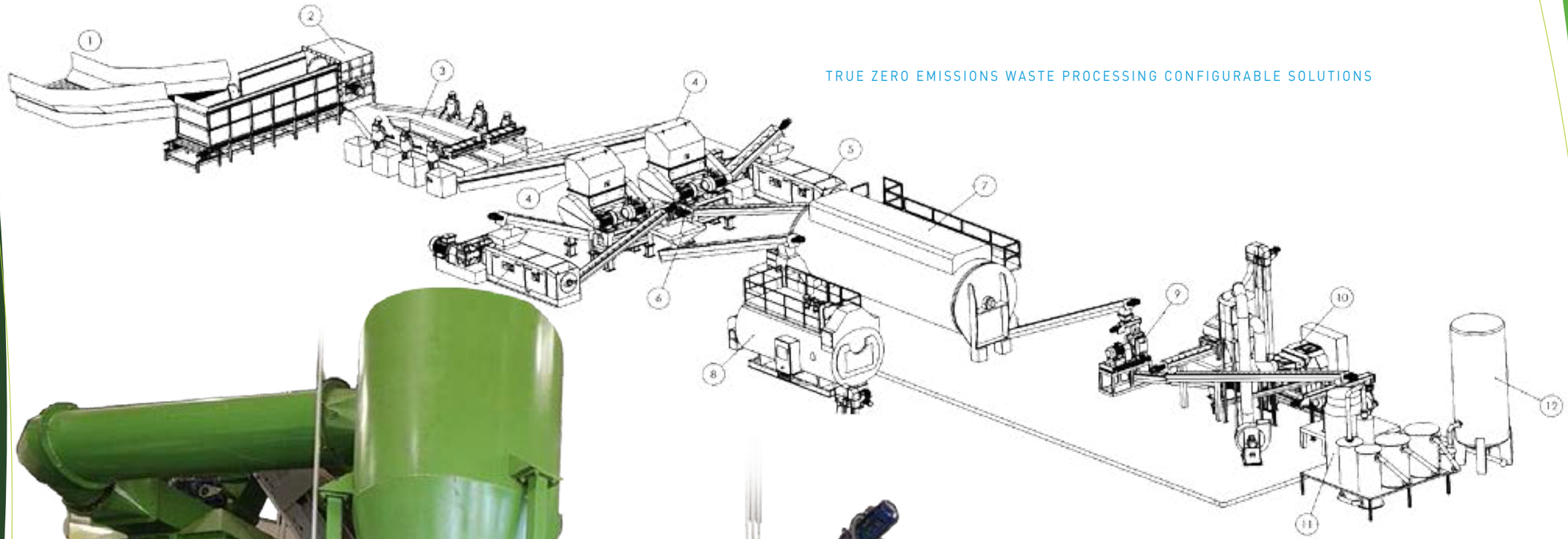
Comparitive table subject to change and may vary over time

TRUE ZERO EMISSIONS WASTE PROCESSING CONFIGURABLE SOLUTIONS

Available Sizes:
3 Ton per hour
5 Ton per hour
10 Ton per hour
20 Ton per hour

Up to 42 tons per hour

In less than 30 minutes



eco friendly

#	Description
1	Dumping Conveyor
2	Bag Ripper
3	Sorting Unit
4	Shredder
5	Press
6	Helix Hopper
7	Cooker/Dryer
8	Steam Boiler
9	Grinder
10	Pelletizing Unit
11	Gasifier
12	SynGas Storage Tank

Featured
15 TON
Dual Conveyor
Dual Shredder
SynGas Unit

Waste to Pellets

Pellets to SynGas

SynGas to Electricity

ORGANIC WASTE PROCESSOR - OWP

CONVERT ORGANIC WASTE OR YARD WASTE INTO FEED, FERTILIZER, OR GREEN ENERGY

After cooking, option to extract nutrient rich and bacteria free liquid

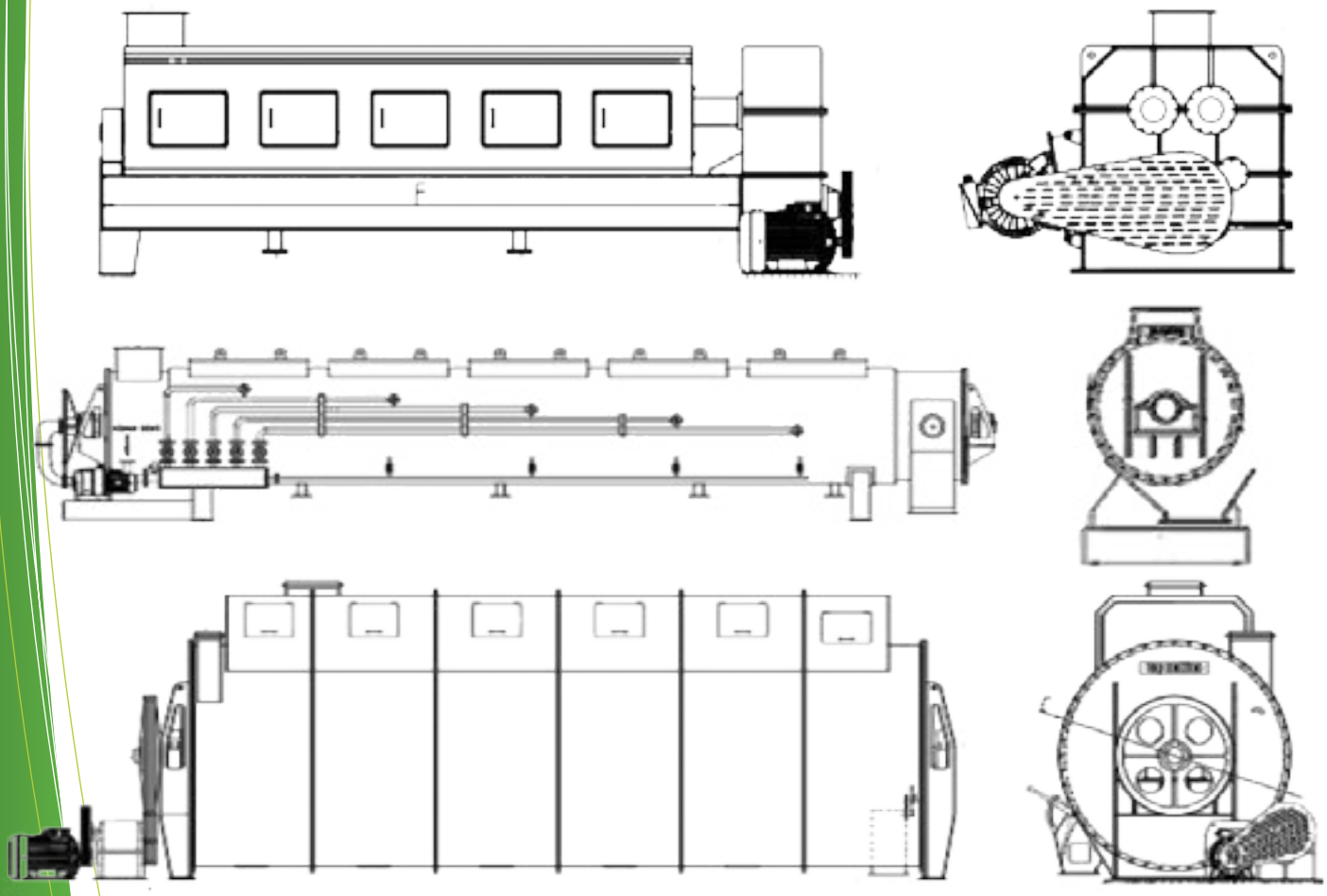
- Create an immediate organic fertilizer product
- Use as a base nutrient-packed liquid for specific fertilizer blends

Further processing options

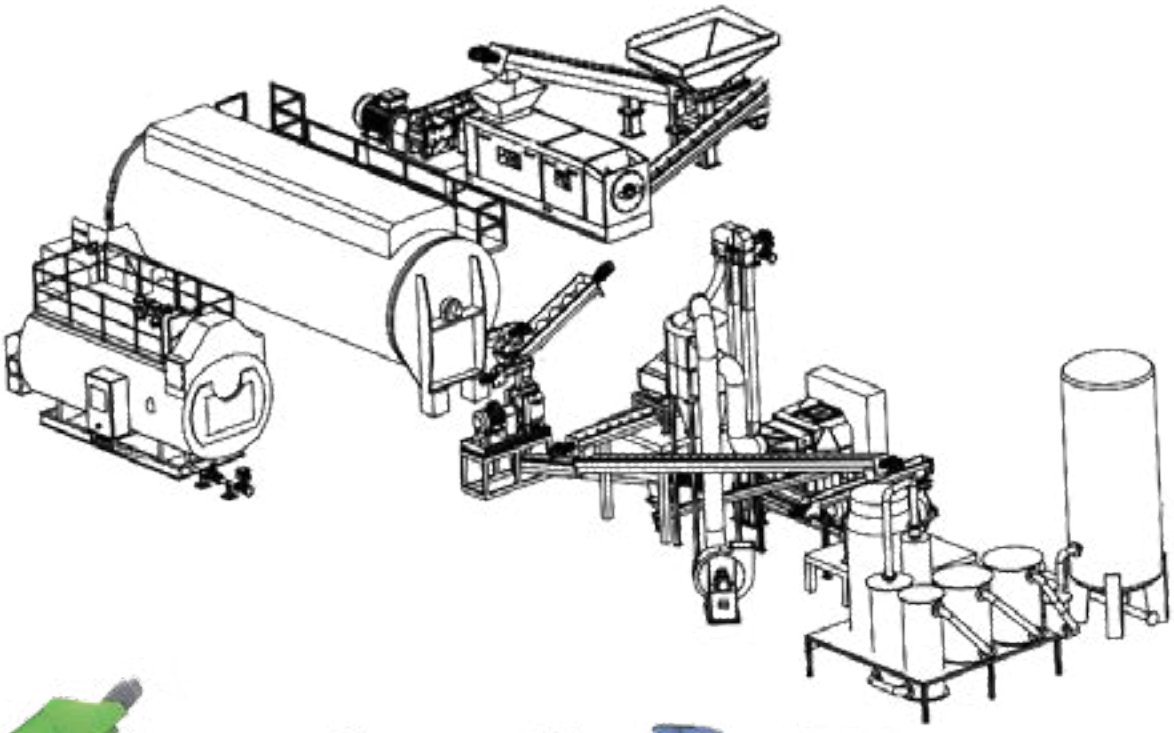
- Immediate bag feed and fertilizer product in our automated system
- Process end-product into pellets then use our coolers to ensure low moisture content and long storage life

Optional on-site SynGas System

- Immediately convert pellets to electricity at rate of 1 megawatt per-ton
- Convert SynGas into natural gas products like CNG, LNG, or pipeline gas
- Use a portion of the SynGas to operate the steam boiler and electricity to power the entire system (approximately 15% of total SynGas produced will do both)
- Sell excess to power grid or pipeline



Transform Organic Waste into Fertilizer Animal Feed and fuel pellets in less than 30 minutes



eco friendly

Organic
Waste
Processor (OWP)

Available Sizes:
350 TPD
400 TPD
800 TPD

Organic Waste Processors

	Type	Capacity	Weight	Power
1	P 350	350 TPD	9500 kg	37 kW
2	P 400	400 TPD	10880 kg	45 kW
3	P 800	800 TPD	26600 kg	55 kW

KITCHEN WASTE PROCESSOR - KWP

IDEAL SOLUTIONS FOR HOTELS, FOOD MANUFACTURING AND PROCESSING COMPANIES

Kitchen
Waste
Processor (KWP)

Available Sizes:
KWP 300
KWP 1000

Kitchen Scrap
Kitchen Waste
Table Scrapings
Expired Food
Yard Waste

System Highlights

- Fits into a very small footprint
- Handles all types of organics waste and common contaminants (paper and plastic)
- Provides full compliance with mandatory organics recycling regulations
- Eliminates disposal costs and landfill needs
- Kills all harmful bacteria and odors rapidly

Technology

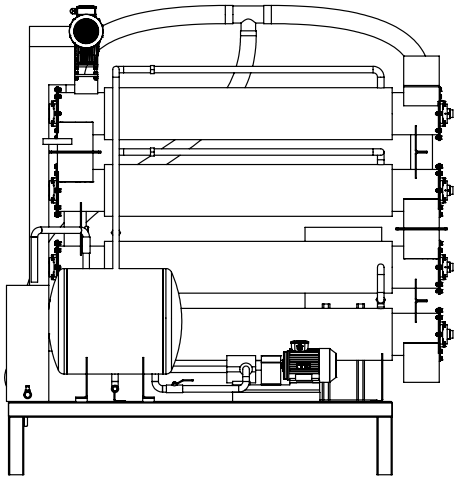
- All the innovations of our larger machines in a compact size
- Durable and simple to operate
- Easy to maintain

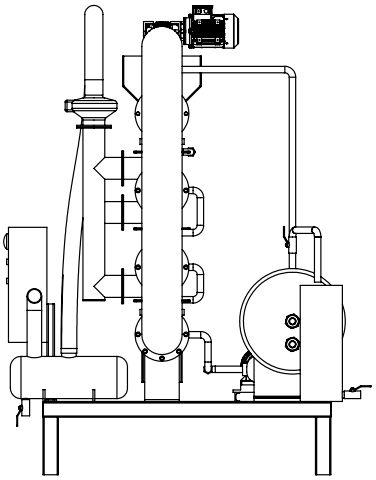
Solutions

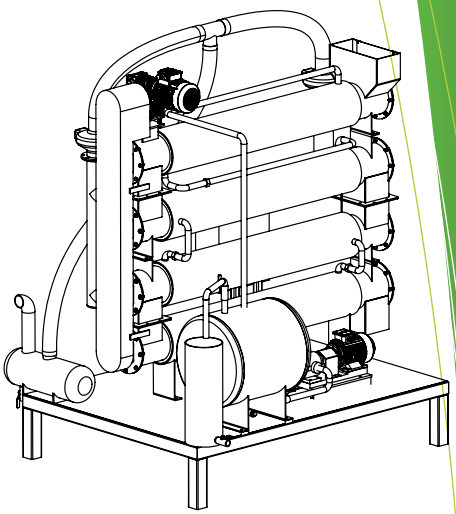
- Produce feed, fertilizer, or fuel pellets rapidly
- Eliminate existing waste collection costs
- Easily integrated into existing waste collection/consolidation process
- Waste collection cost savings, plus end product values provides a quick payback on your investment

Kitchen Waste Processors

	Type	Capacity	Weight	RPM	Amerage	L	W	H
1	KWP	150 kg/h	1055 kg	1440	115.5 / 57.74	1740 mm	2326 mm	2445 mm
2	KWP Press	300 kg/h	1300 kg	2000	28.53 / 14.26	2567 mm	688 mm	930 mm







Kitchen Scrap
Kitchen Waste
Table Scrapings
Expired Food
Yard Waste

eco friendly

SynGas Generators

Available in multiple configurations

Simple electricity production

Customize to add heating and cooling for central air and water

Methane
Diesel
Petroleum
Jef Fuel
Fly Ash

GASIFICATION SYSTEM WITH CHILLER

TRANSFORMING ONE TON OF FUEL PELLETS TO 1 MEGAWATTS OF ELECTRICITY

GEODYN™ unique and patented process is the only one that can turn municipal solid waste (MSW) into an effective fuel for syngas systems. Replicating much of the benefits of torrefaction, yet not burning the processed material, we rapidly create pellets with gross calorific values of 4,700 to over 6,000 with MSW, and 3,500 (horse manure) to 5,200 with organic waste. At 4,500 kcal/kg our pellets produce 1 megawatt of electricity per-ton.

The syngas process releases no emissions so we provide a superior and green alternative to fossil fuels, coal, or wood biomass for energy production. Our syngas or pellets can easily be used in the following common applications, with great environmental benefit:

Pellet or Coal Fired Power Plants – Industrial Steam/Heat Boilers – Pellet Heaters – Gas Stoves

ELECTRIC GENERATOR

SYNGAS GREEN ENERGY CONVERTED TO ELECTRICITY

GEODYN™ has overcome the most common difficulties faced in marketing of RDf which is bad or not stable quality of the product (limitations are due to odor/foul smell and variation in GCV of the RDf). GEODYN™ has established plants that follow a stringent process to establish fuel Pellet as a Green Alternative fuel to Coal especially in emerging markets due to its stable quality and price advantages.

SYNTHESIS GAS (SynGas) BENEFITS

TRUE ZERO EMISSIONS SYSTEM

- High BTU value pellet that generate up to 1.2 megawatts of electricity per-ton of MSW
- Eliminate processes MSW to bacteria
- SynGas unit creates a zero emission energy fuel in a process: takes minutes, not months to produce anytime of the year
- Anaerobic digestion takes one week to one month to produce a much "dirtier" gas AND leaves 95% residue (digestate) with requires further processing
- SynGas unit produces clean gas in minutes and residue is marketable fly ash or biochar at approximately 17% residual-rate

In addition, its immediate production capabilities allows you to power your entire GEODYN™ System on the pellets it produces

Customizable solutions for air conditioning heating and steam solutioins

CUSTOMIZABLE SOLUTIONS

- Electricity can be consumed on site and exported
- On-site SynGas System Boiler can eliminate need for pelletizin

SAVE MONEY FOR SYSTEM OPERATORS & THE COMMUNITIES THEY SERVE

Global economy - Pellet Benefits

	Benefit	Description
1	Efficient	• Uniform shape & size for best consistency and efficiency • Fuel pellets have stable low moisture content and produces reusable fly ash residue or biochar
2	Safe	• Easy to use and store for future uses or global shipping • Low risk of fire hazards or immediate combustion
3	Smokeless operations	• Zero Emissions during low heat burning process • SynGas is produced in an encapsulated process
4	Cost effective	• Significant lower enery cost than comparitive fuel sources
5	Sustainable Eco-Friendly	• Fuel pellet consumption produces lower emissions • Biomass residue is a green replacement for fossil fuels • Ultra low-emissions to produce electricity and no emission to produce CNG, LNG, or pipeline gas

TOTAL WASTE SYSTEM

ORGANIC WASTE PROCESSOR

KITCHEN WASTE PROCESSOR

KWP

OWP

TWS

GEODYN
SOLUTIONS

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