

**Response to Sullivan County Questions
November 7, 2022**

1. Name of Organization of Lease:

Hughes Energy, LLC

Privately held Delaware-registered Limited Liability company (File No. 4775233). Only Mr. Brendan Hughes owns above 25% of the shares.

Registered in 2012 in Delaware.

This has been an investment vehicle for the development of the US market by Brendan Hughes and other investors. Total investment to date over \$10M.

2. Funding Sources

A Canadian PE firm has committed to fund the first 5 HEG plants in the US worth at least \$450,000,000 (and up to double that amount).

To release funds to build, HEG must provide: site permits; a long-term land lease; valid guaranteed waste contracts; and valid guaranteed customer contracts for the fiber produced from the plant.

The PE company is happy to discuss the details confidentially with the relevant parties in Sullivan County leadership and provide support details on a confidential basis.

Ultimately, a separate legal entity owned by HEG and the PE firm will execute the long term lease for the \$90M plant envisioned in Sullivan County which will be fully funded to make lease payments backed by the long-term guaranteed contracts for waste and offtake. The right of assignment must be included in the contract for the full-scale plant.

HEG is willing to share the business case with the relevant parties in Sullivan County leadership on a confidential basis.

3. Current HEG Sites under Development

- Contract in place to purchase the Green-Del transfer station in Prattsville, New York. DEC Part 360 application submitted. Status: in process. Scope of EIS issued by DEC (lead agency). Technology signed off internally by DEC.
- Town of Halfmoon, NY potential project on the site of a current mine quarry. Status: site owner reviewing timing and requirement to amend PDD from mine quarry to light industrial (application on hold). HEG pre-submitted DEC Part 360 application.

4. Formal Requests for information:

- Rockland County Solid Waste Management Authority released a Request for Expression of Interest ("RFEI") on January 27, 2020. HEG completed the RFEI and on April 24, 2021 received formal notification of delay. See enclosed announcement.
- Orange County DEP ran a RFP in Jan 2021. HEG was the only respondent. The County cancelled the RFP.
- HEG has met informally with three other NY Counties. In all cases the Counties want to move forward after at least one plant is operating and approved in NY State.

5. Autoclave History and Operations

ABOUT AUTOCLAVING ORGANICS



MSW Autoclaves Operating in 2022

USA - 5 (GA, TN, OR)
 UK - 4
 Italy, Poland, Spain

- Autoclaves were invented in the 1880s to sterilize medical instruments.
- In the 1940s, in Alabama, the first known use of a large autoclave in MSW processing.
- There are over 12 operators of steam autoclaves in organic waste and MSW processing in 2022
- Tens of thousands of industrial autoclaves operate in the US every day in the concrete, tire, defense, aircraft and composite materials industries.



A worker walks past a giant autoclave, which provides superheated pressure needed in the construction of the new 777X composite wing at the Boeing 777X Composite Wing Center in Everett, Washington. Stephen Brashear/Getty Images

6. Current Major MSW Autoclave Facilities (abstract) – see enclosed presentation.

LIST OF MAJOR MSW AUTOCLAVES

COMPANY NAME	PROJECT LOCATION	YEAR BUILT	YEARS OPERATIONAL	NOTES
Wilson System (Thermosave)	UK	1998	3	Proof of concept
Wilson System (Davies Bros.)	UK	2001	5	Landfill reached capacity and closed
Wastaway	Tennessee (US)	2003	operating	
Burcell	Georgia (US)	2005	operating	Series of demonstrator plants
Sterecycle	UK	2008	4	Closed due to poor maintenance leading to fatality
Wilson System (Limerick)*	Ireland	2008	4	UK waste company purchased system – site approved, construction on hold
Graphite	UK	2009	4	Company went out of business
Salinas Valley Waste Authority	California (US)	2010	8	Contract completed

COMPANY NAME	PROJECT LOCATION	YEAR BUILT	YEARS OPERATIONAL	NOTES
Georgia Pacific Paper	Georgia (US)	2013	operating	proof of concept / test facility
Bioelektra	Poland	2014	operating	
Wilson System	UK	2016	operating	Fiber for an anaerobic digester
Wilson System (BDC)	UK	2016	operating	Used for customer trials and R&D throughout Europe
Shanks **	UK	2016	operating	Dirty MRF
FaterSmart (Proctor and Gamble)	Italy	2017	operating	
Burcell	Georgia (US)	2018	operating	Commercial waste transfer station
AeroThermal	UK	2018	operating	
Georgia Pacific Paper (Juno)***	Oregon (US)	2021	operating	Toledo production center

* Wilson System Limerick Video: <https://www.youtube.com/watch?v=HLsrIJSFORc>

** Shanks Video: <https://www.machinexrecycling.com/video/shanks-wakefield-two-systems-rdf-mrf/>
 *** Juno System Video: <https://www.youtube.com/watch?v=qVGKjYzgWcQ>

7. Videos of Major MSW Autoclave Facilities

- Wilson Bio-Chemical Limerick Video: <https://www.youtube.com/watch?v=HLsrIJSFORc>
- Shanks UK Video: <https://www.machinexrecycling.com/video/shanks-wakefield-two-systems-rdf-mrf/>
- Juno System (Oregon) Video: <https://www.youtube.com/watch?v=qVGKjYzgWcQ>

8. Wilson Bio-chemical Technology Customers

Wilson Steam Autoclave Plants – expanded list (industry listed after each location)

- Remediation Technologies, Sheffield, UK - Waste processing.
- Davies Brothers Waste, Porthcawl, UK - Waste processing.
- Re3, Limerick, Ireland - Waste processing.
- Wilson Bio-Chemical, York, UK – Waste processing trials facility.
- Pinderfields Hospital, Wakefield, UK – Sterilization.
- British Biotechnology, Oxford/Abingdon, UK – Sterilization.
- Victor Achter, Burnley, UK – Yarn textile conditioning.
- Intex Yarns, Whitefield, UK – Yarn textile conditioning.
- Aristoc Hosiery, Belper, UK – Hosiery forming.
- Walkers Crisps, Lincoln, UK – Food processing.
- Campbells Foods, Worksop, UK – Food canning.
- Nestle, Wisbech, UK – Pet food pouching.
- Pedigree Petfoods (Mars), Melton Mowbray, UK – Pet food pouching.
- Butchers Petfoods, Crick, UK – Pet food pouching.
- Dunlop Rubber, Grimsby, UK – Rubber curing.
- Tarmac, Hams Hall, Birmingham, UK – Concrete block curing.

Wilson Non-Autoclave Steam Process Plant

- British Steel, Lacenby, UK – Vacuum degassing – Steam storage design and installation.
- British Aerospace, Brough, UK – Steam generation, process and space heating design and installation.
- British Nuclear Fuels, Sellafield, UK – Process pipework systems. Design.
- Forgemasters Steels, Sheffield, UK – Vacuum degassing – Steam generation and steam storage design and installation.
- Courtaulds Chemicals (Amtico), Coventry, UK – Product manufacture – Steam storage design and installation
- Courtaulds Textiles, Grimsby, UK – Process pipework systems design and installation.
- Brintons Carpets, Kidderminster, UK – Textile dyehouse design and installation. Steam generation and steam storage.
- Victor Achter, Burnley, UK – Textile dyehouse design and installation. Steam generation and steam storage.
- Haggas (Brook Taverner), Keighley, UK – Textile dyehouse- Steam storage design and installation.
- Mackenzie's (Harris Tweed), Stornoway, UK -Textile dyehouse upgrade/optimization. Design and installation.
- Altamira Colours, Kilwinning, UK – Textile dyehouse design and installation. Steam generation and steam storage.
- Fruit of the Loom, Bunrana, Northern Ireland – Textile dyehouse- steam storage design and installation.
- Edward Hall, Whaley Bridge, UK - Textile bleachery design and installation. Steam storage.

- Tuscarora, Northampton-London-Stoke, UK- Polystyrene moulding – Steam storage design and installation.
- Tuscarora, Spennymoor, UK – Polystyrene moulding plant design and installation. Steam generation and steam storage.
- SCA Packaging, Northampton, UK – Polystyrene moulding – Steam storage design and installation.
- CWS Creamery, Liandyrnog, Wales – Creamery – Steam storage design and installation.
- Eden Vale, Shrewsbury, UK – Creamery – Steam storage design and installation.
- Fenland Foods, Grantham, UK – Food processing- Process plant design and installation. Steam generation and steam storage.
- Invergordon Grain (Whisky) Distillery. Innvergordon, Scotland– Steam storage design and installation.
- Tetley’s Brewery, Leeds, UK - Process plant design and installation. Steam storage.
- Black Sheep Brewery, Masham, UK - Process plant design and installation. Steam generation.
- Spirax Sarco, Cheltenham, UK – Steam specialist component manufacture - Steam storage design.

9. PFAS / PFOS

(See enclosed presentation)

10. Process Flow and Site Requirements

(See enclosed presentation)

11. Standard Waste Characterization

(averages of NYS Field Based Studies – 2008 to 2018 – in Otsego, Ulster, Albany, NYC)

REGIONAL DATA WASTE STUDIES	
MATERIAL BREAKDOWN AVERAGE VALUE	
FOR THE FLOW CHART & MASS BALANCE	
Paper and Cardboard	27.88%
Ferrous Container	1.24%
Aluminum Cans	0.46%
Other Aluminum	0.25%
Other Non Ferrous	0.12%
Other Ferrous Metals	3.24%
PET	0.92%
HDPE	0.66%
Film Plastic	2.87%
Plastic Containers (3-7)	1.23%
Other Plastics	7.26%
Plastic Packaging	0.90%
Glass	3.79%
Food Scraps	21.16%
Yard Trimmings	4.07%
Textiles	5.73%
Wood	2.70%
C&D Materials	2.80%
Diapers	1.10%
Electronics	1.08%
Tires	0.25%
HHW	0.21%
Fines	2.04%
Other	8.05%
TOTAL	100%
TOTAL ORGANICS	56.25%