



FOREVER
MARYLAND

2022 MARYLAND CONSERVATION CONFERENCE

June 1, 2022

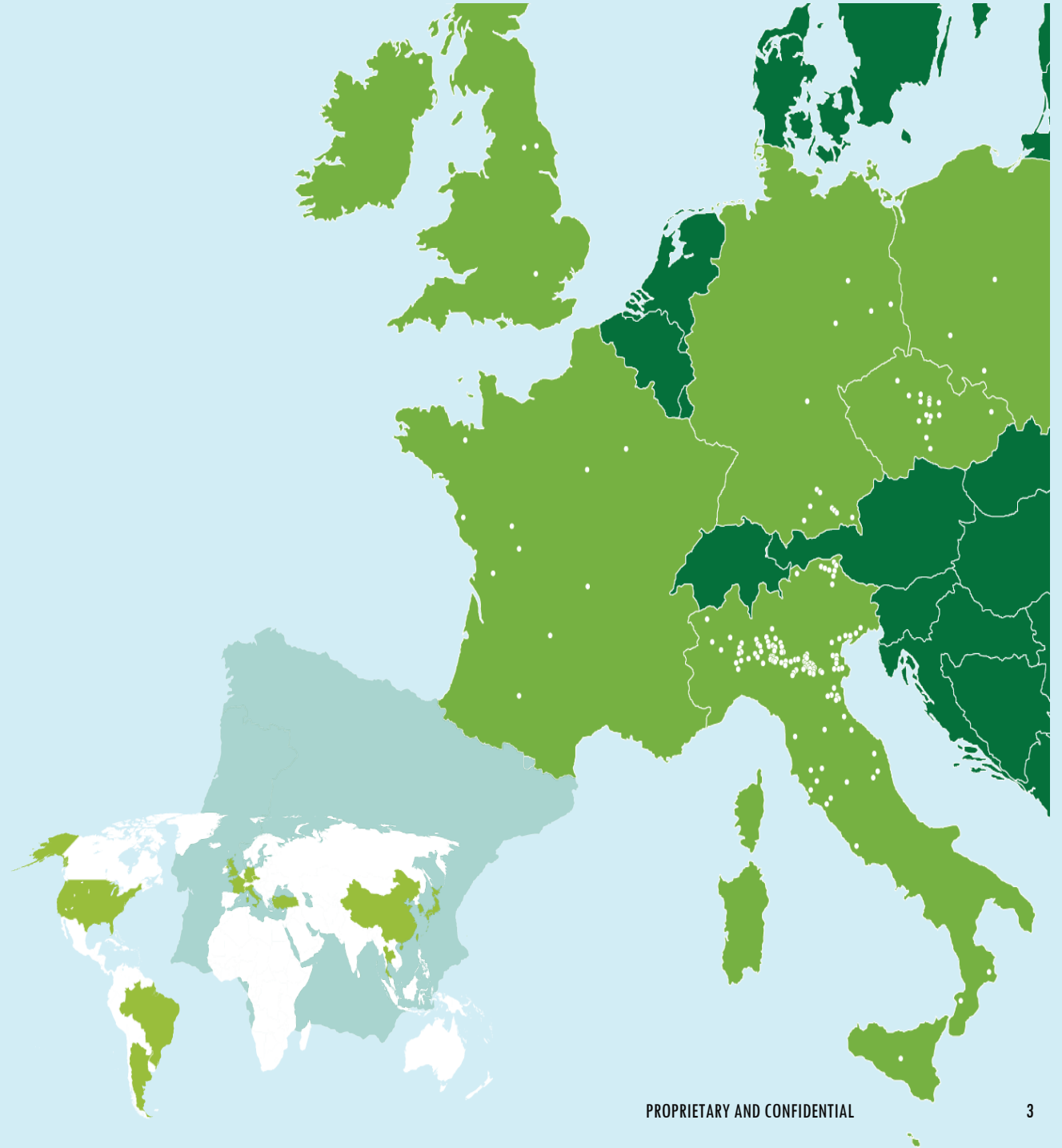
BIOENERGY DEVCO

A GLOBAL LEADER IN THE
FINANCE, DESIGN, BUILD
AND OPERATION OF
ANAEROBIC DIGESTERS

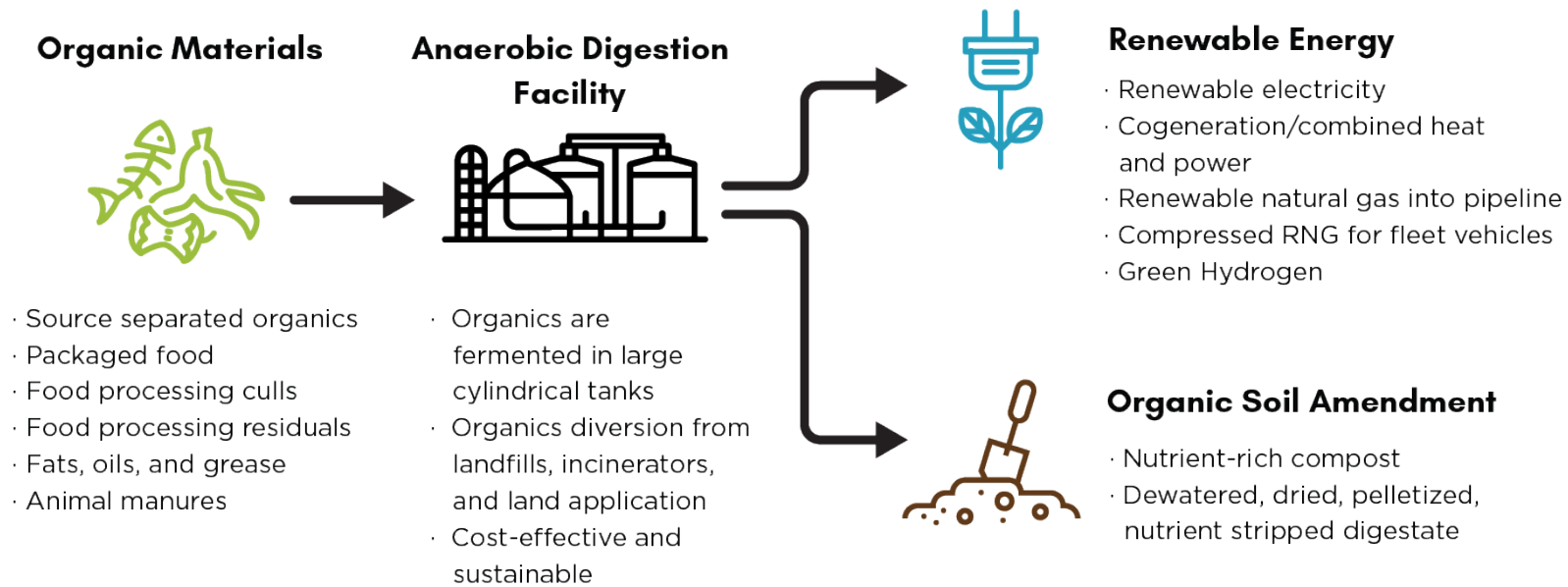




- 250 modular biogas plants built in Europe, Asia, and North America with continued maintenance and service of 140 plants
- #1 market share in Italy and France
- Guaranteed and insured performance and interconnection services
- Build, assembly, maintenance, and operations
- Fully automated, proprietary and patented equipment with associated telemetry
- Lab testing, monitoring and nutrient management support from a dedicated microbiology laboratory with 25 years of performance data
- Co-digestion experts: multiple feedstocks and performance standards



WHAT IS ANAEROBIC DIGESTION?



Think of this process as a cow's four-chambered stomach, but on a large scale.

MANAGEMENT OF ORGANIC WASTE CREATING GREEN ENERGY AND SOIL OUTPUTS



RENEWABLE ENERGY

- Electricity / CHP
- Grid Injection
- Fleet Vehicle
- Green Hydrogen
- Cogeneration
- Summer/winter “peaker”



ORGANIC SOIL AMENDMENT

- Class A Regenerative Product
- Dewatered
- Dried
- Granulated
- Nitrogen/Phosphorus Stripping



MEETING OUR COMMUNITIES HOLISTIC ENVIRONMENTAL GOALS

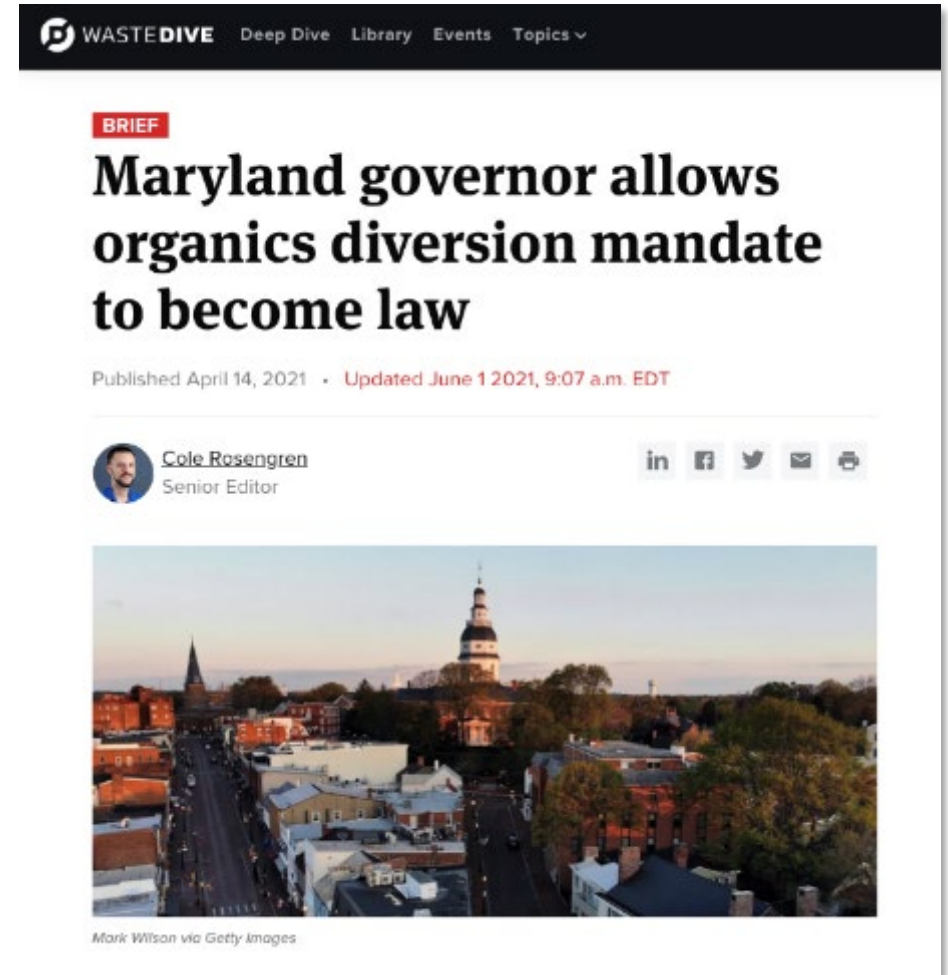
- **Renewable Energy**
 - When organic materials are anaerobically digested, biogas is created. Biogas is a renewable source of energy, and can be used for producing electricity and heat, as a natural gas substitute, a clean transportation fuel and as a precursor to clean green hydrogen,
- **Healthier Air**
 - Our facilities help to minimize carbon-intensive disposal practices like landfills and land applications that release polluting greenhouse gases into the atmosphere – improving the air that we breathe.
- **Healthier Water**
 - BDC's fully enclosed anaerobic digesters eliminate groundwater pollution often caused by excessive land application of nutrients and landfill operations, minimizing excessive nutrient runoff that can poison ecosystems and cause significant human health issues.
- **Healthier Soils**
 - As a byproduct of the anaerobic digestion process, our facilities produce organic, odorless soil amendments that can be applied to public lands and community gardens to replenish nutrients.

SO WHY NOW MARYLAND'S ORGANIC WASTE LEGISLATION

Maryland HB 264 / SB 483 Organics Recycling and Waste Diversion

Requires any entity that:

- a) generates that generates at least 2 tons of “food residuals” each week beginning in 2023, scaling up to one ton each week in 2024; and
- b) that is within 30-mile radius of an organic recycling facility
to divert their organic waste from landfills and incinerators. Fully passed and became law June 2021, effective October 2021, enforced 2023.

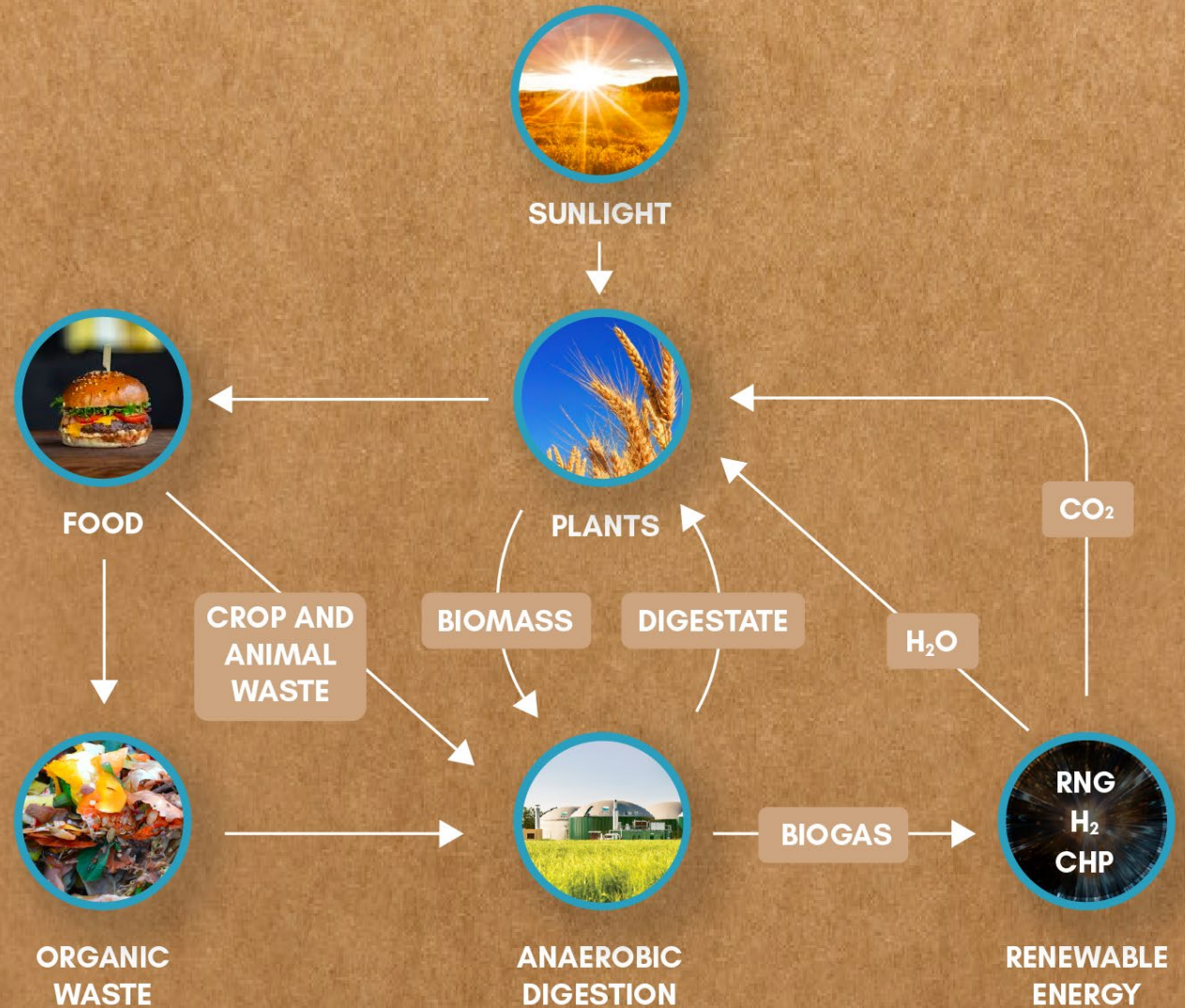


WITH AD THERE IS NO SUCH THING AS WASTE -- ONLY OPPORTUNITY

Anaerobic Digestion mimics nature's cycle.

purpose + end products = resources for the next natural process.

- Biogas as an energy carrier
- Reduction of GHG emissions
- Biogas as raw material – further use of carbon dioxide and methane
- Soil regeneration and carbon sequestration
- Multi-contributor of Local Economies – From waste liability and water eutrophication to energy security, soil enrichment, GHG mitigation, job creation



MARYLAND FOOD CENTER AUTHORITY

Location: Jessup, MD

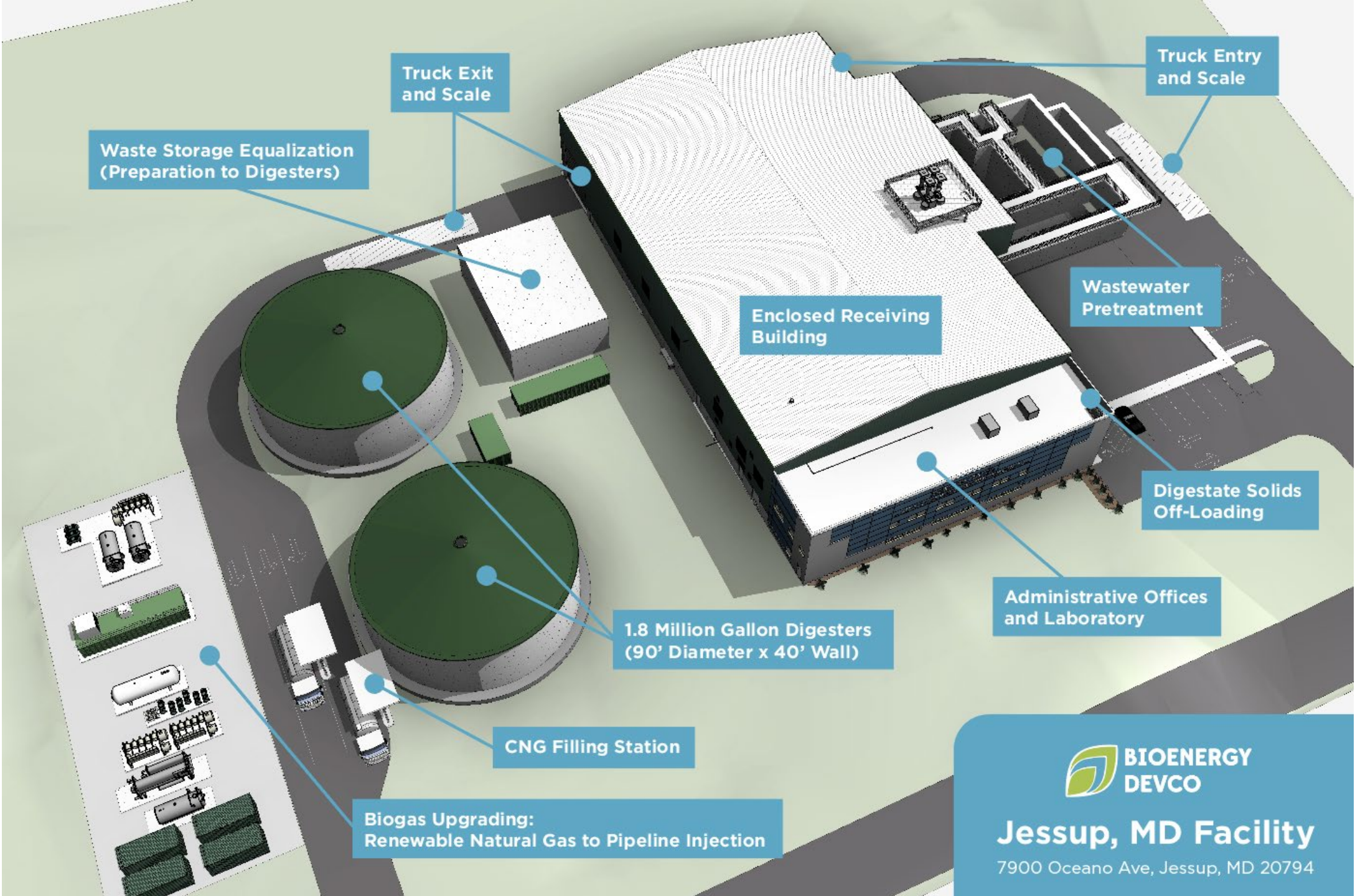
Feedstocks: 115,000 tons/year of food residuals, FOG, and other similar organics

Gas Production: 265,000 MMBtu/year

Development Phase: Construction

About: The MFCA facility is located on the campus of the Maryland Food Center, home to the region's largest food processors and distributors.





Waste Storage Equalization
(Preparation to Digesters)

Truck Exit
and Scale

Truck Entry
and Scale

Enclosed Receiving
Building

Wastewater
Pretreatment

Digestate Solids
Off-Loading

Administrative Offices
and Laboratory

1.8 Million Gallon Digesters
(90' Diameter x 40' Wall)

CNG Filling Station

Biogas Upgrading:
Renewable Natural Gas to Pipeline Injection

 **BIOENERGY
DEVCO**

Jessup, MD Facility

7900 Oceano Ave, Jessup, MD 20794

DELIVERING ON THE PROMISE



A typical commercial-scale AD facility generates 275,000 MMBtu of energy, the equivalent of:

the annual electricity consumption of 6,635 US households.

1,978,417 gallons of diesel fuel.

11,870,503 miles of tractor trailer fuel.

4,240 trips across the US by a tractor trailer.

BIOENERGY INNOVATION CENTER

FORMERLY PERDUE AGRIRECYCLE

Location: Seaford, DE

Feedstocks: Up to 210,000 tons/year of excess organics from the poultry industry such as DAF and litter

Gas Production: 410,000+ MMBtu/year

Development Phase: Construction

About: The Bioenergy Innovation Center (BIC) is a state-of-the-art facility dedicated to minimizing environmental impact and enriching the land, while creating new opportunities around the Delmarva peninsula.





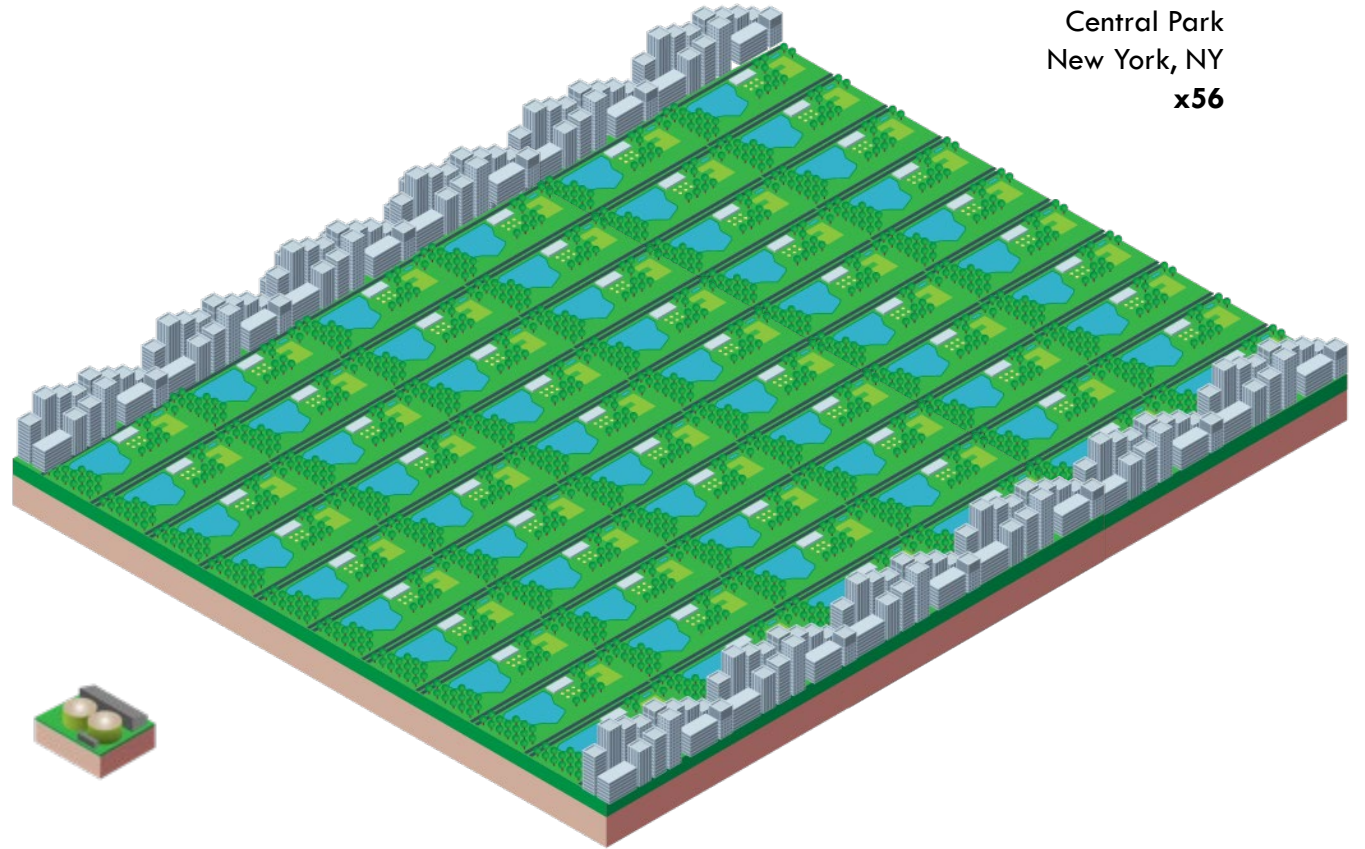


THE IMPACT OF ANAEROBIC DIGESTION ON COMMUNITIES

- Increases the lifespan of a local landfill, reducing percolates, increasing water quality
- Reduces odor as organics are deposited into sealed tanks
- Shrinks transport costs and associated environmental impact
- Reduces greenhouse gases and enables CO₂ and methane capture and use
- Reduces pathogens and antibiotic use in the environment as digested organics are effectively pasteurized and dried digestate can be used as an organic soil amendment
- Creates both direct and indirect jobs to construct and manage the facility as well as attend to the resulting offtake use and distribution

IMPACT OF ANAEROBIC DIGESTION ON CARBON REDUCTION

A typical AD facility has the same carbon sequestration impact that that a forest area **56 times** the size of Central Park can provide!



WHERE ECOLOGY AND ECONOMICS CONVERGE TO SHAPE OUR CLIMATE SUCCESS STORIES



Create a new source of renewable, sustainable, and clean energy



Reduce GHG emissions that come from traditional disposal methods of excess organics



Eliminate the land application of nutrients



Ensure that what's good for the environment is good for business by providing long-term waste expense visibility while going green



BIOENERGY DEVCO

Get in touch or schedule a site tour:

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