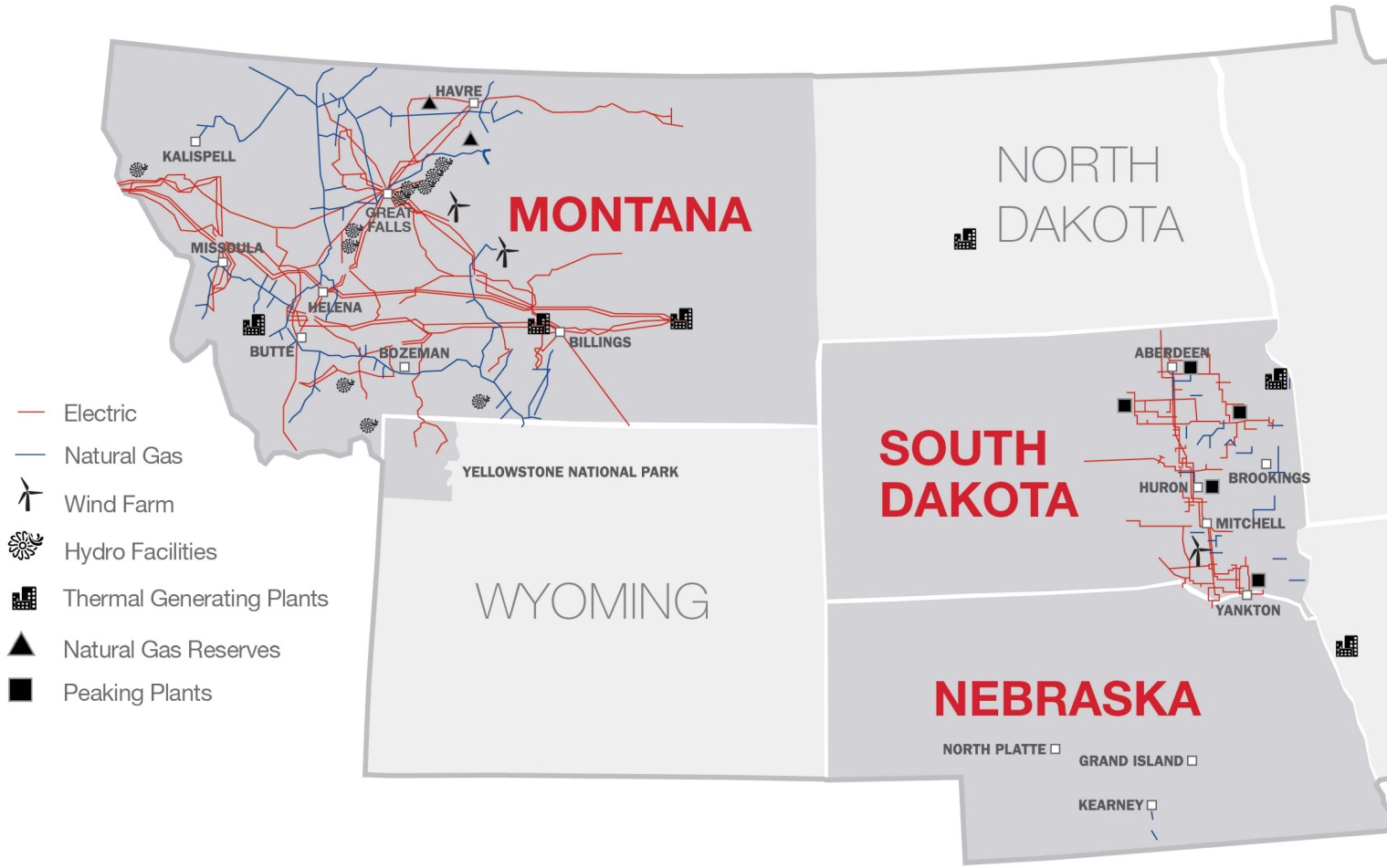
Renewable Natural Gas

3/11/2025

About our company



About our company

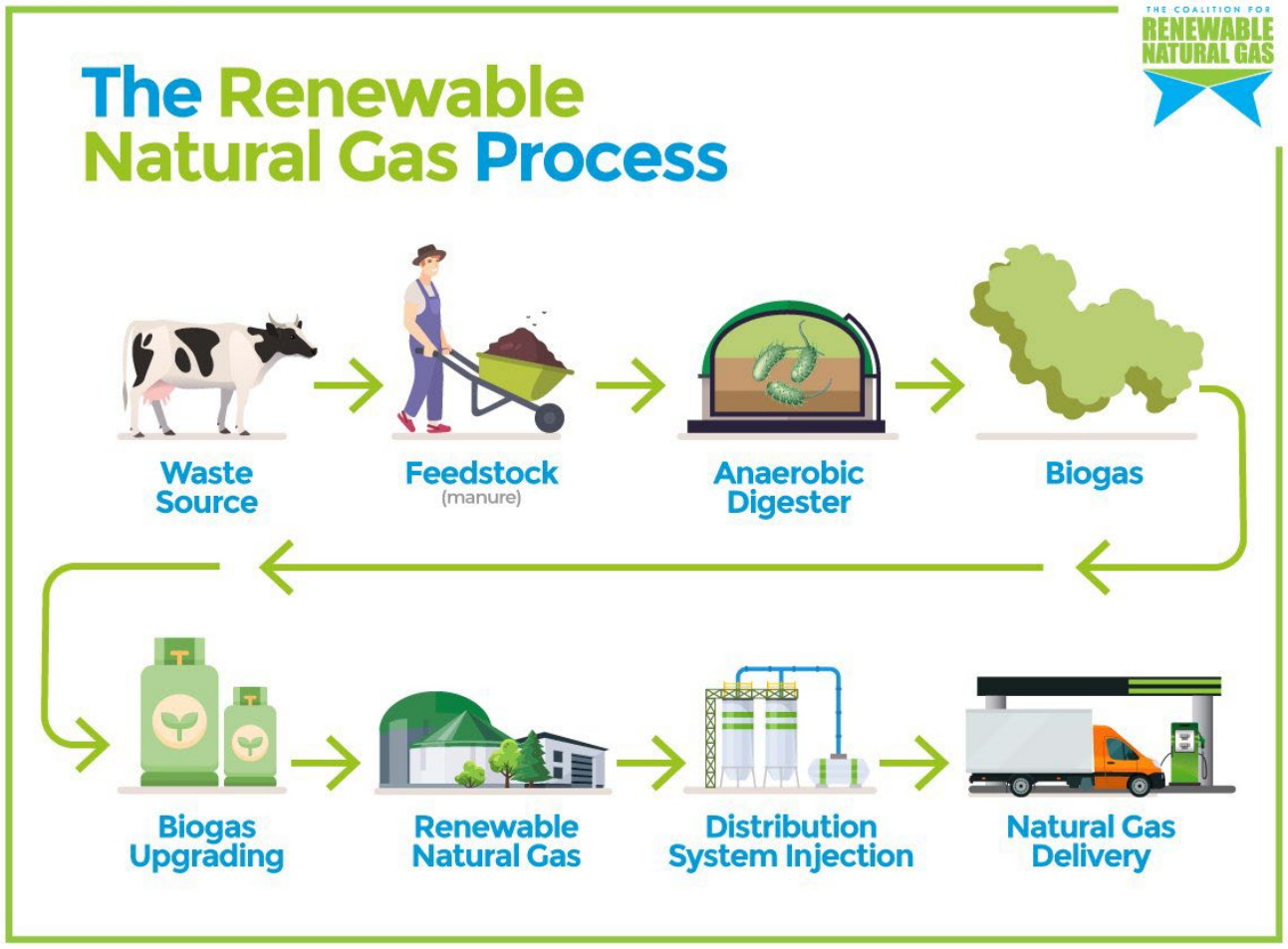
775,300
Customers

1,573
Employees

337
communities in Montana and South Dakota with electric service

202
communities in Montana, South Dakota and Nebraska with gas service

Topics



https://www.rngcoalition.com/infographic

- RNG Basics
- RNG Process
- Financing
- Utilization
- NWE & RNG
- RNG Outlook

RNG Basics

Gas sources

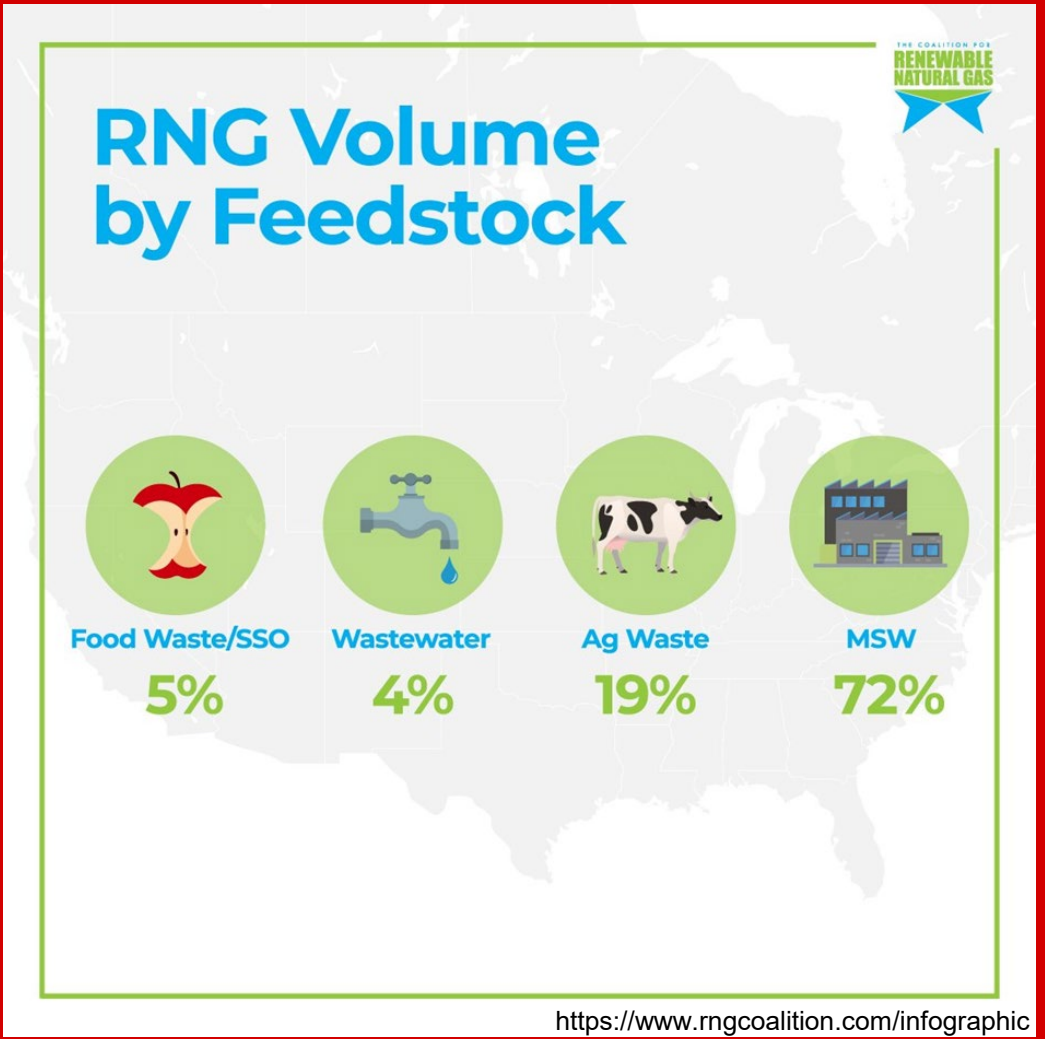
- Food waste
- Water purification facilities
- Animal waste
- Landfills

Capture

Cleaning & testing

Utilization

- On-site utilization (vehicles, heat, processes, power production)
- Pipeline injection



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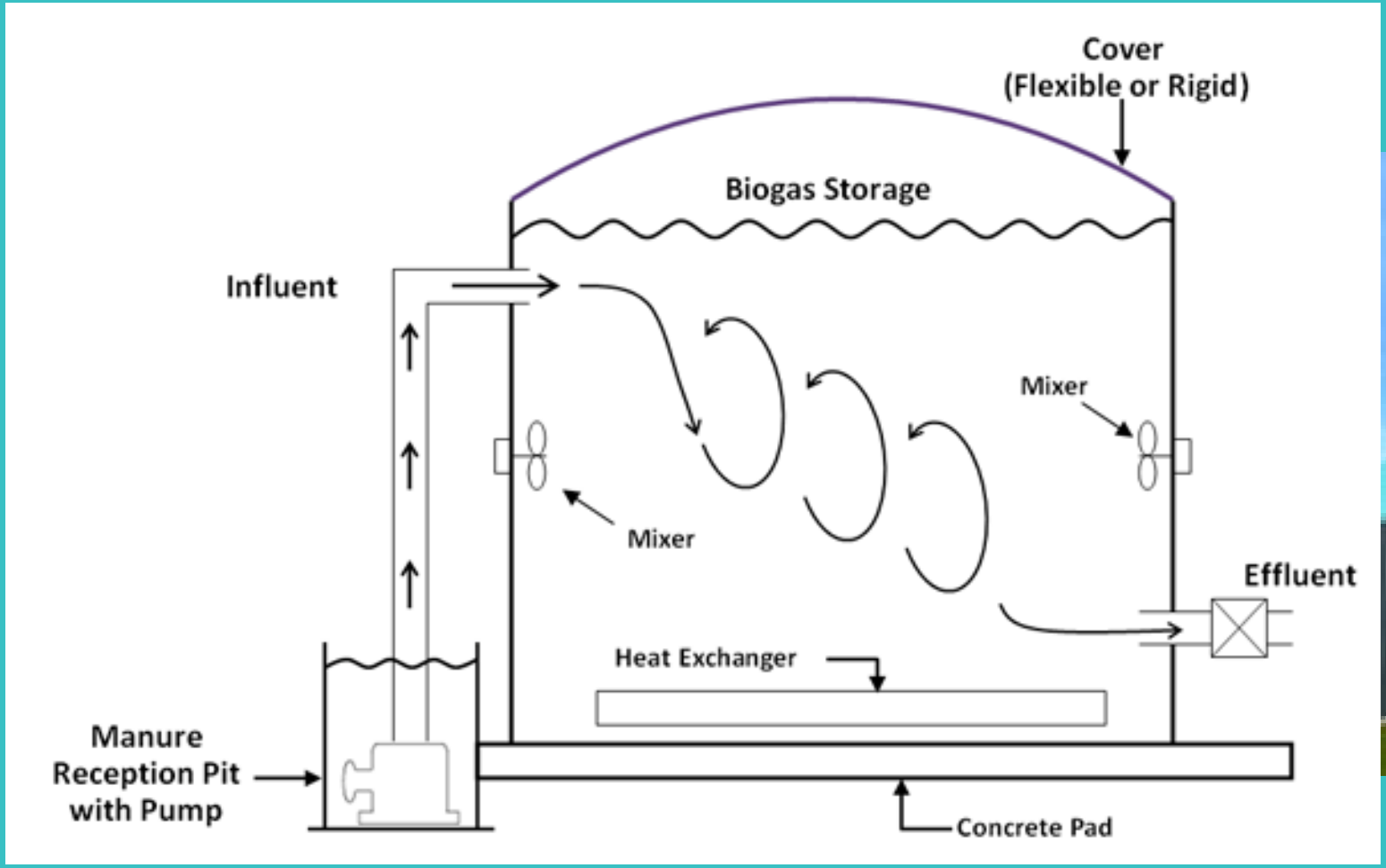
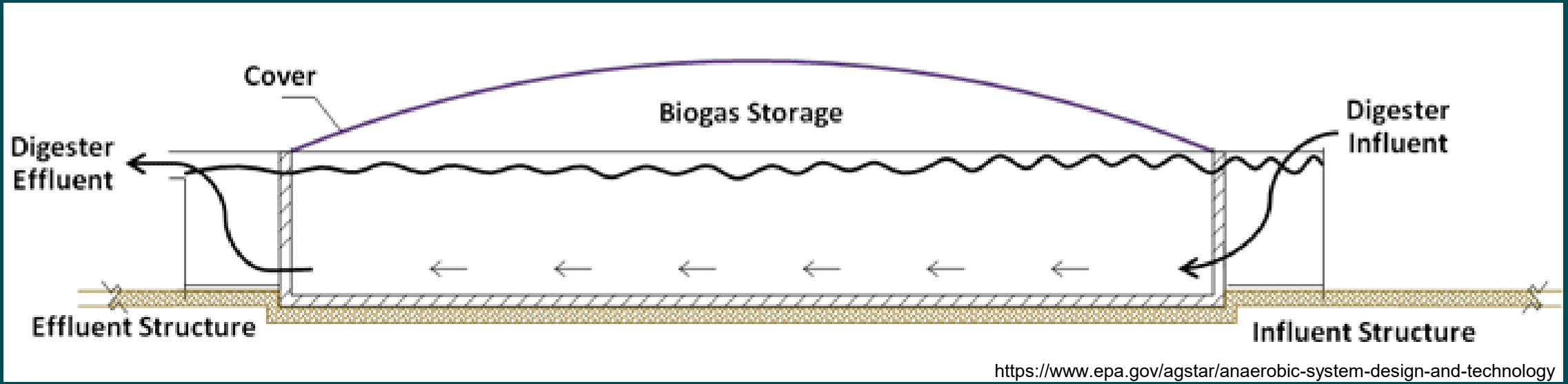
Digesters – Complete Mix



https://www.epa.gov/agstar/anaerobic-system-design-and-technology

Digesters – Plug Flow



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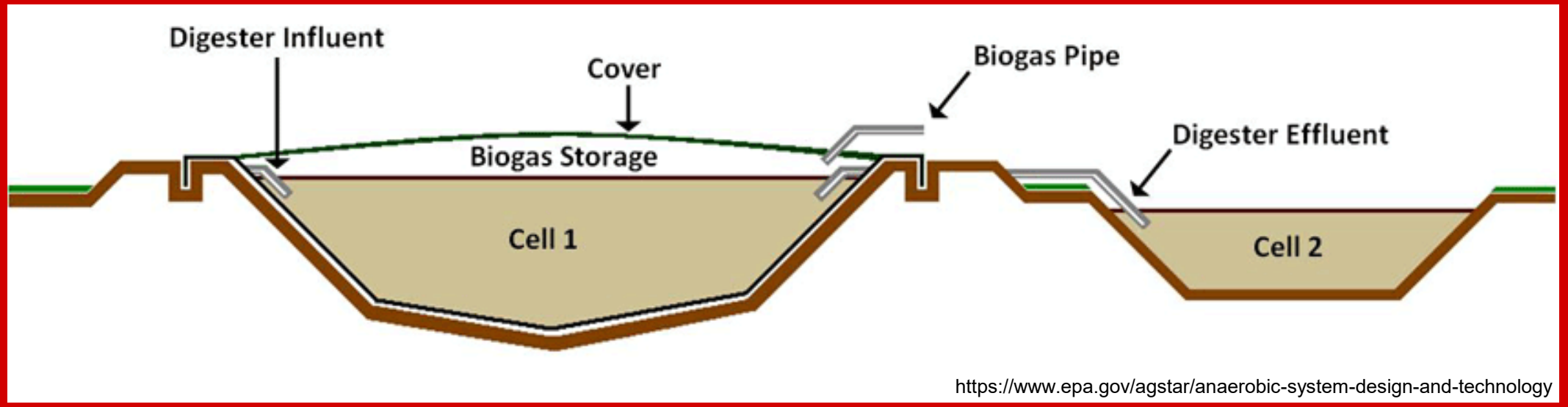
Digesters – Covered Lagoon



https://www.epa.gov/agstar/anaerobic-system-design-and-technology

Financing

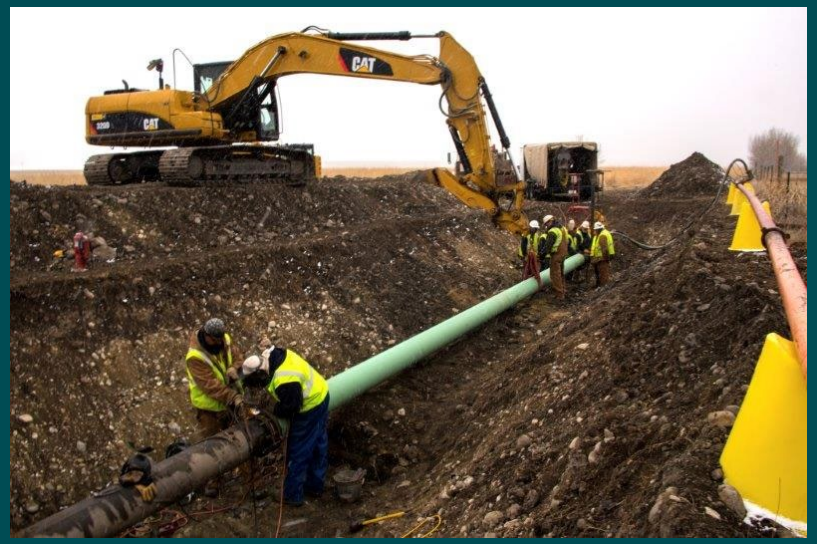
Government subsidizing and regulations

- Research and development project grants
- Production credits
- Customer side government regulations
- Utility side government regulations

Corporate sponsorships

- Large scale energy companies (BP, Chevron, etc.)
- Small scale utilities and businesses adding diversification
- Customer financing

Methods of Movement



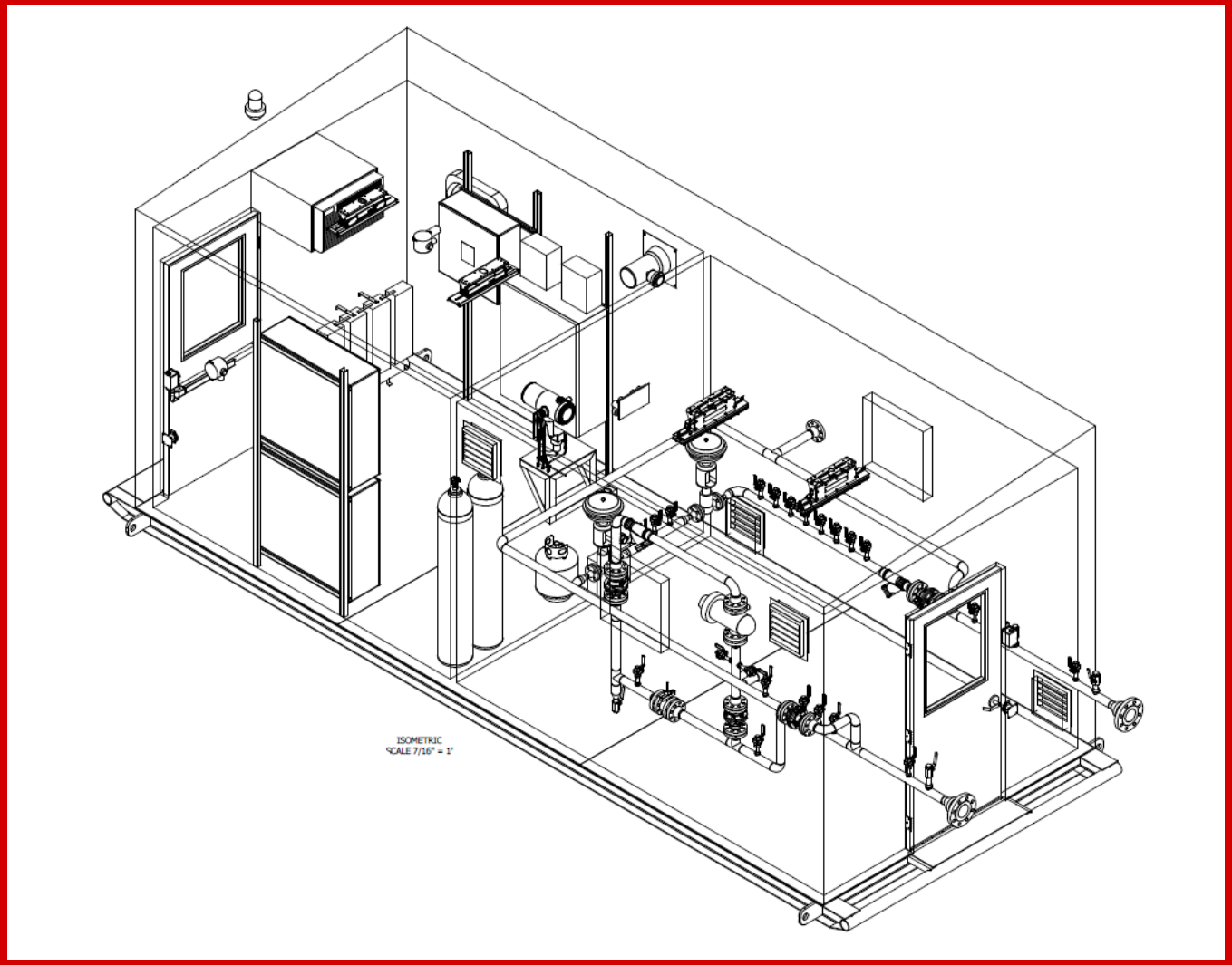
Pipeline

Virtual Pipeline

https://certarus.com/about-us

On-site Utilization

Quality Testing



Gas Chromatograph

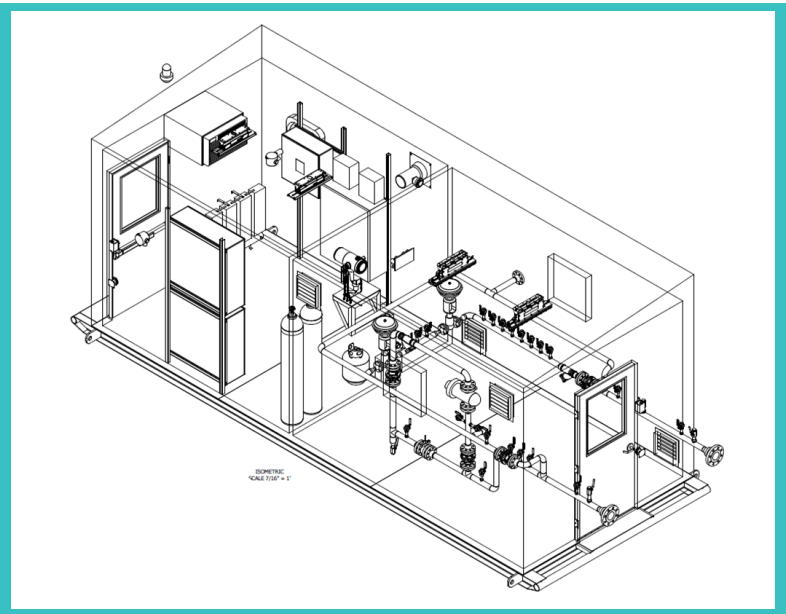
- Carbon Dioxide
- Oxygen Content
- Hydrogen Sulfide
- Sulphur Content
- Water Vapor
- Temperature
- Heating Value

Laboratory

Quality Testing Design Iterations

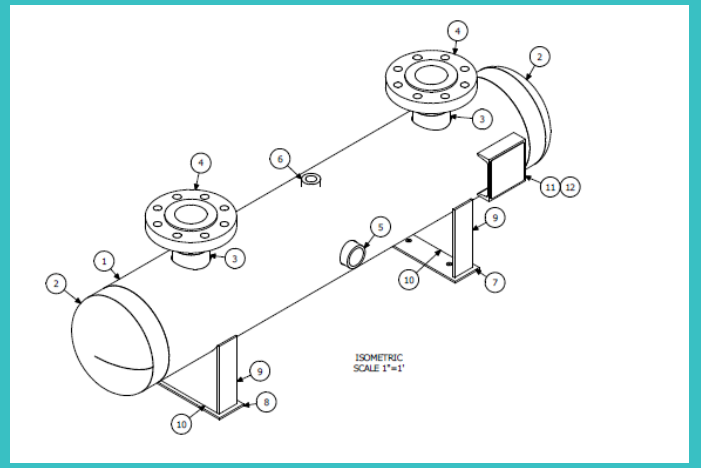
Dual → Single building

- Reduced complexity
- Lower risk of breaks/strikes
- Single vendor

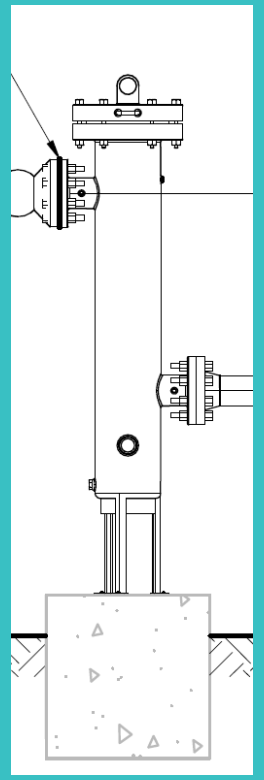


Drop out → Coalescing filter

- Better filtration
- Reduced design time



Reject gas line



NWE & RNG

NWE is an investor owned, regulated utility

NWE does not develop production systems. We provide a transportation service to RNG developers, to allow their gas to reach a viable market

The most valuable part of the RNG to developers is the government credits received. The commodity is sold to large volume consumers or the utility at or below market rate.

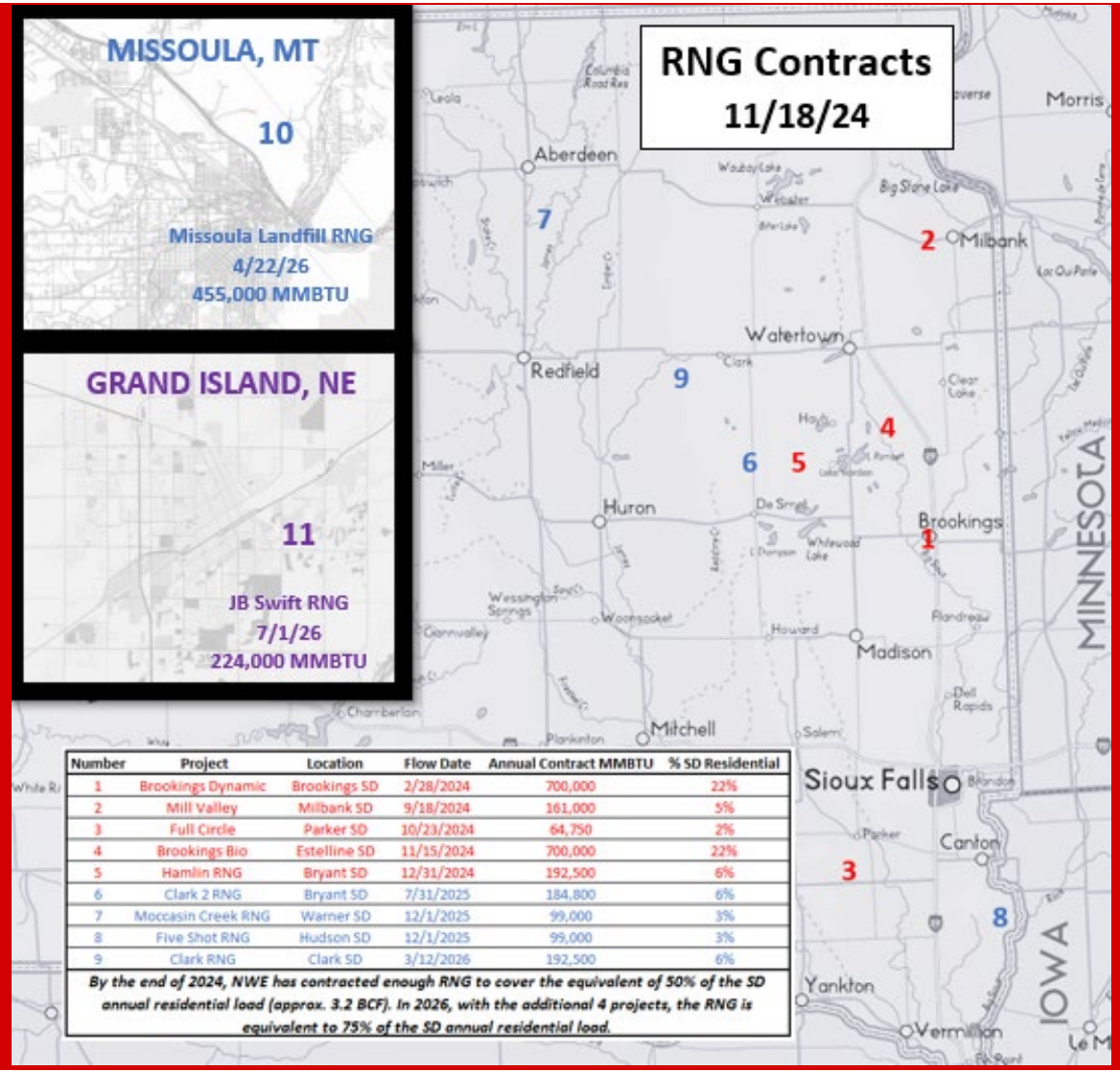
- 3rd party marketing
- Utility customer consumption

NWE Current Projects

Over $23M projected to be invested in the next 3 years

First project online in March 2024. 4 more online by close of 2024

By EOY 2024, NWE will transport enough RNG to cover 2/3 total residential load*



Number	Project	Location	Flow Date	Annual Contract MMBTU	% SD Residential
1	Brookings Dynamic	Brookings SD	2/28/2024	700,000	22%
2	Mill Valley	Milbank SD	9/18/2024	161,000	5%
3	Full Circle	Parker SD	10/23/2024	64,750	2%
4	Brookings Bio	Estelline SD	11/15/2024	700,000	22%
5	Hamlin RNG	Bryant SD	12/31/2024	192,500	6%
6	Clark 2 RNG	Bryant SD	7/31/2025	184,800	6%
7	Moccasin Creek RNG	Warner SD	12/1/2025	99,000	3%
8	Five Shot RNG	Hudson SD	12/1/2025	99,000	3%
9	Clark RNG	Clark SD	3/12/2026	192,500	6%

By the end of 2024, NWE has contracted enough RNG to cover the equivalent of 50% of the SD annual residential load (approx. 3.2 BCF). In 2026, with the additional 4 projects, the RNG is equivalent to 75% of the SD annual residential load.

**NWE is providing "brown gas" (i.e. the molecules of gas without the environmental attributes) to our customers.*

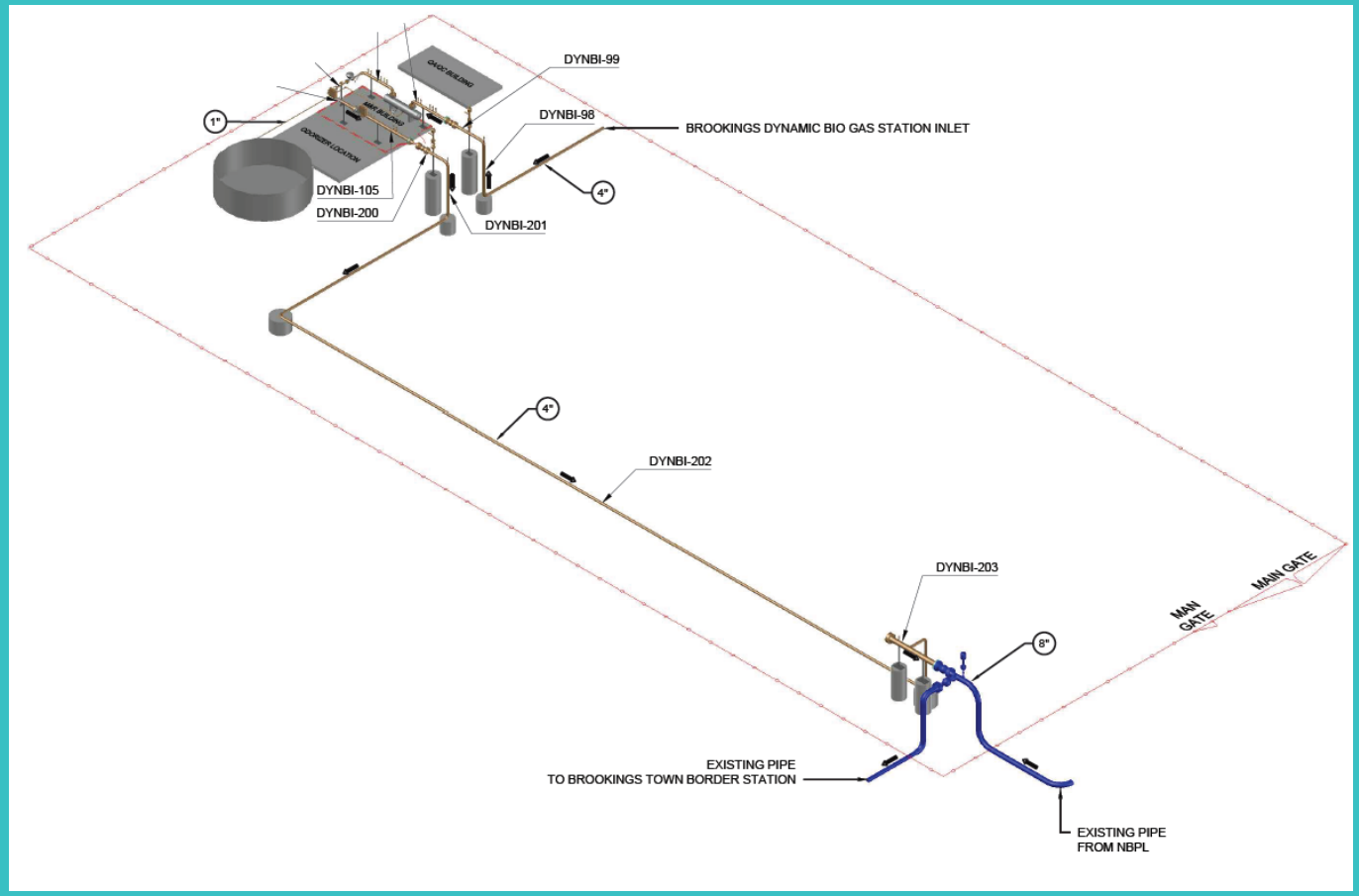
Brookings RNG Station

Decanting station located at the town border station supplied by a virtual pipeline

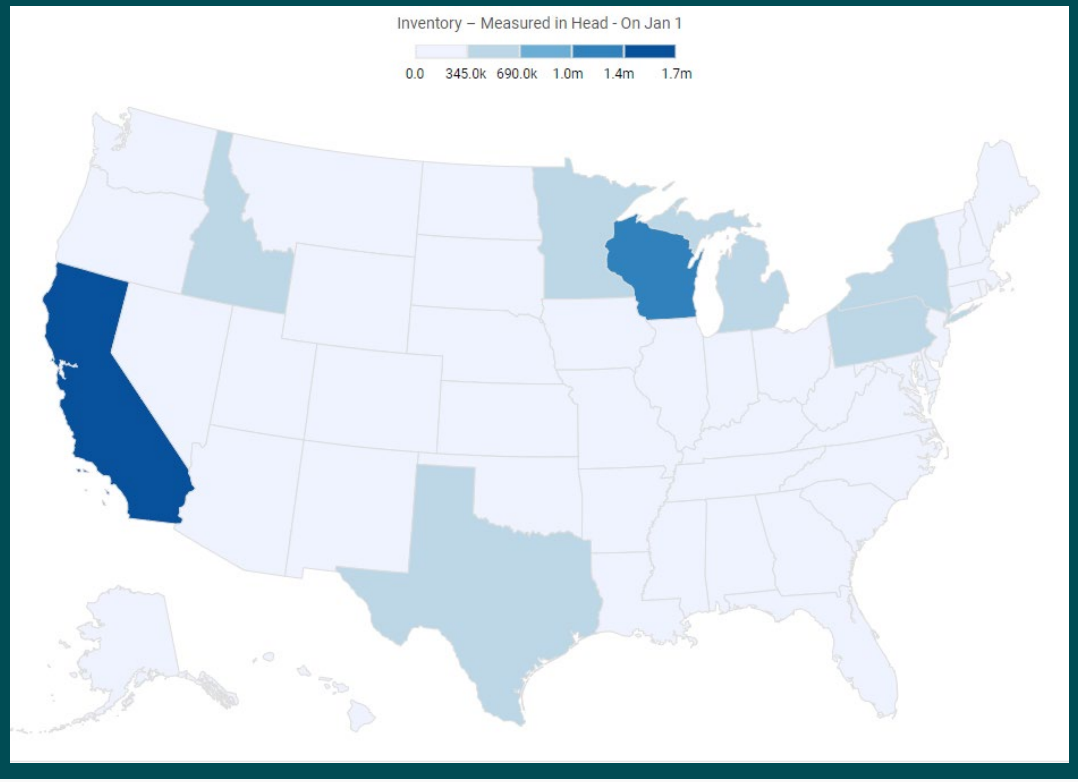
Contains measurement, regulation and quality assurance equipment

Expected to flow 145 MCF/hour peak, supplied by 8 farms

Gas injected into the NWE distribution system



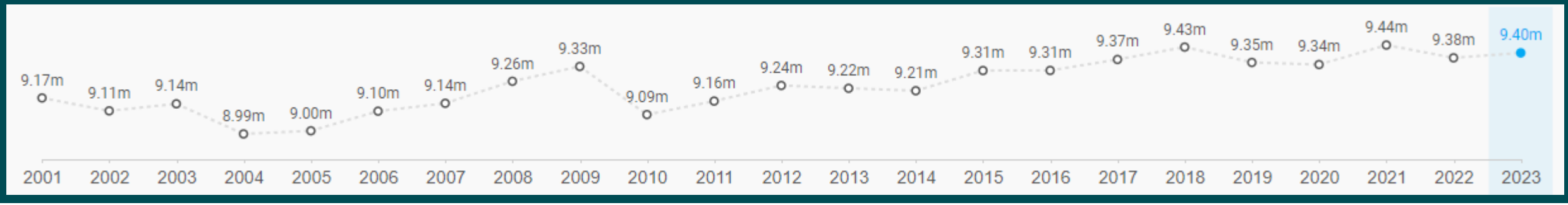
Dairy RNG Outlook



South Dakota primarily utilizes dairy waste RNG

Dairy cattle inventory is relatively steady around 9M head in the US

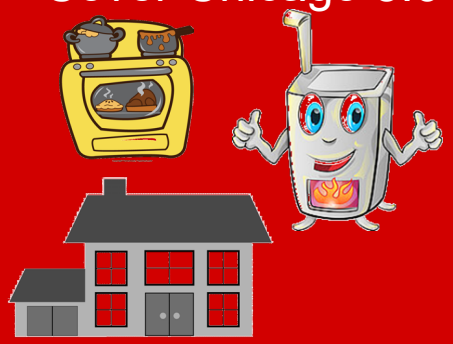
Dairies producing RNG are typically large (1,000+ head)

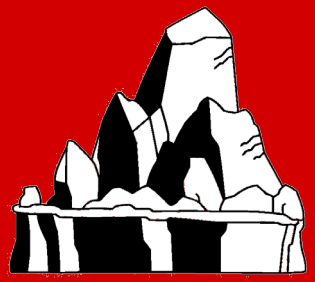


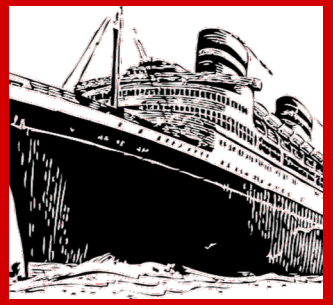
Dairy RNG Outlook

9,000,000 dairy cows in the US produce about 30,000 lbs. manure/cow, or roughly 270,000,000,000 lbs. of manure annually – enough to:

- Fill 56,000,000 side dump semi trailers
- Fill the White House 16,700 times
- Cover Chicago 5.6 feet deep





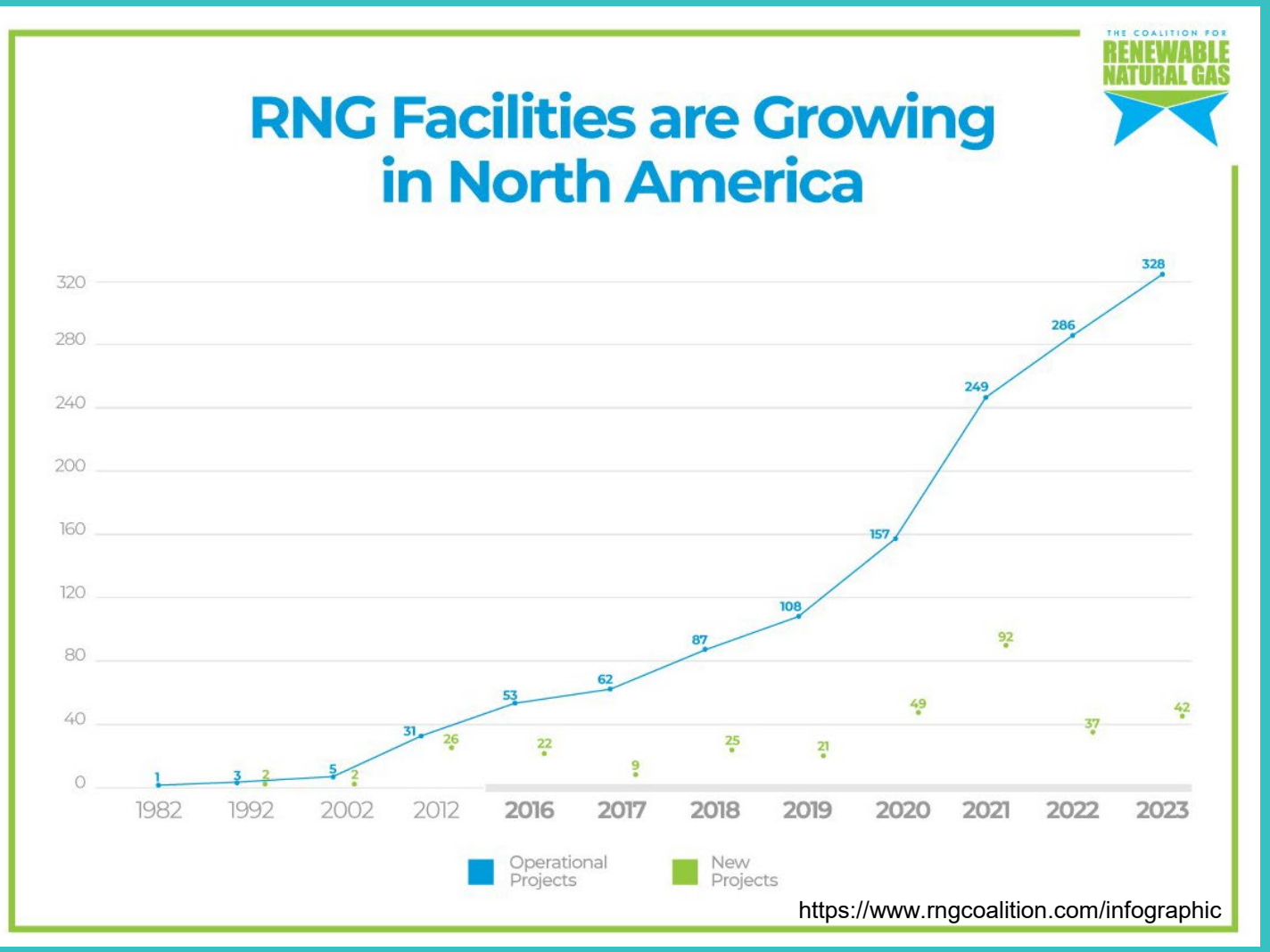


1lb of manure yields approximately 3ft^3 of gas, meaning there is approximately 810,000,000 MCF of renewable gas collectible annually. That's enough to:

- Heat 10,125,000 homes (1.125 homes/cow)
- Provide 110,054,347 MWH of electricity*
- Melt the iceberg that sank the Titanic 1700 times over

*PER US Dept of Energy – 7.36ft^3 per KWH

RNG Outlook



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Short-term Outlook

Large dairy construction slowdown

Dairy-developer contract terms

Increased efficiencies/reduction in input requirements

Potential government policy changes (standardization on national scale)

Long-term Outlook

Consolidation of smaller developers

Gathering of smaller farms' waste or raw gas

Increased onsite/transportation utilization

Dairy alone could only capture 2.6% of the US natural gas market.

- Hogs – currently less efficient
- Bio waste – currently less consistent
- Feedlots – currently too hard to clean

Questions?

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Delivering a Bright Future