The USA, and Canada policies, perspectives, challenges and progress—US Report

Patrick Serfass, Executive Director

May 2020 | World Biogas Association eFestival

Who we are

The only US organization representing the entire biogas industry

All sectors represented

- Project developers/owners
- Equipment retailers and dealers
- Waste management companies
- Waste water companies
- Farms
- Utilities
- Municipalities
- Consultants and EPCs
- Financiers, accountants, lawyers and engineers
- Non-profits, universities and government agencies

200+ organizations

2,000+ individuals

With what infrastructure will we manage:

66,500,000 TONS of food waste each year

The sludge from 31 BILLION gallons of wastewater EVERY DAY

The manure AND NUTRIENTS from 8 BILLION cows, chicken, turkey and pigs

The US Biogas Market

- **Current**
- **255** on Farm
- **1,269** Water
- **66** Food Scrap
- **645** at Landfills

Potential

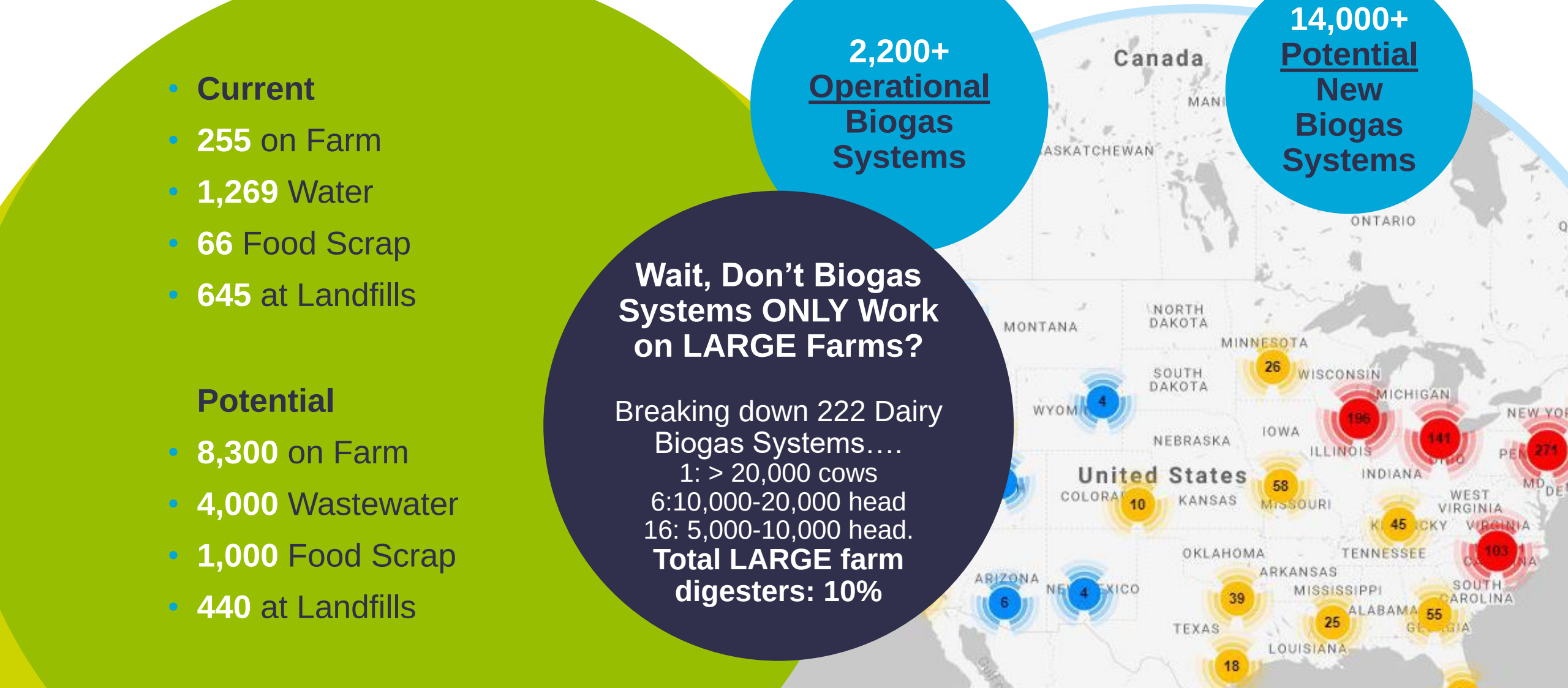
- **8,300** on Farm
- **4,000** Wastewater
- **1,000** Food Scrap
- **440** at Landfills

2,200+ Operational Biogas Systems

14,000+ Potential New Biogas Systems

Wait, Don't Biogas Systems ONLY Work on LARGE Farms?

Breaking down 222 Dairy Biogas Systems….
1: > 20,000 cows
6:10,000-20,000 head
16: 5,000-10,000 head.
Total LARGE farm digesters: 10%



RNG Projects Driven By:

1. The Federal Renewable Fuel Standard (RFS)

And

2. The CA (mostly) Low Carbon Fuel Standard (LCFS)

Conventional gas: $3/MMBTU

Biogas→RNG: $9-90/MMBTU

Potential Game changer: eRINs.

(Could stack RINs + RECs)

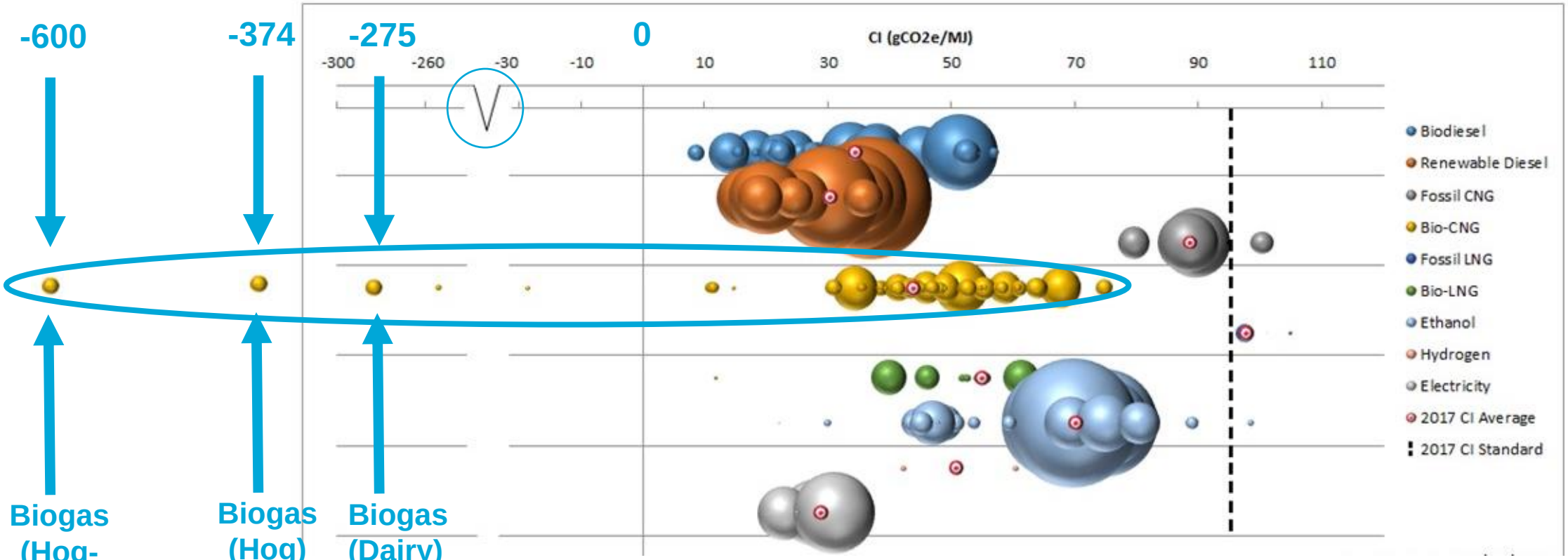
Farm Bill Programs

9 States now have organics recycling laws

Voluntary RNG purchases for corporate sustainability

But how climate friendly is biogas?

Carbon Intensity by Fuel Type



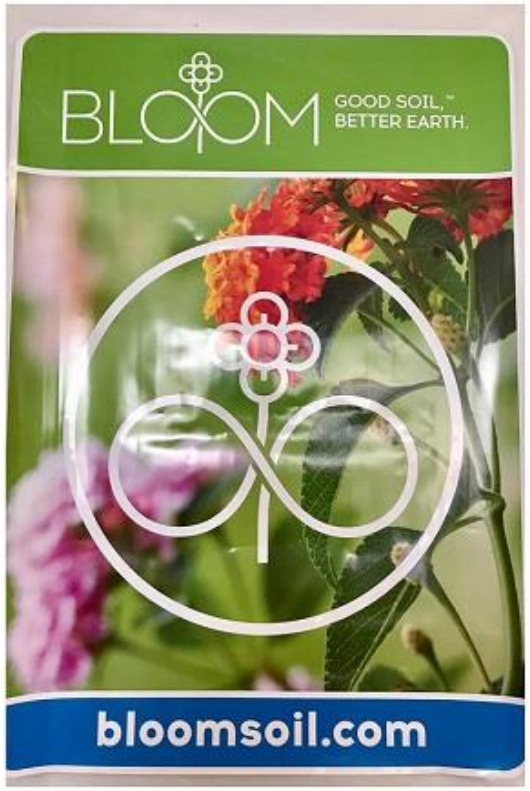
For their Low Carbon Fuel Standard, the California Air Resources Board evaluates EVERY PROJECT INDIVIDUALLY on a lifecycle basis, to determine whether the new project will add or remove carbon emissions compared to whatever actual emissions are currently emitted from whatever the project is replacing.

Some Trends in the American Market

DC Water/Blue Plains (DC)

- largest advanced wastewater facility in world
- 370 MGD wastewater
- $400 million project
- 13 MW generated, uses 26 MW
- saves $10M/year in electricity costs + $15M/year in other costs (30 fewer truck trips/day)
- provides all emergency power if major failure
- operational 2015

DC Water’s Bloom (digestate)



Ringler Energy in OH (swine, food waste, stewardship)

- Manure (25%, 7,000 hogs); biosolids (25%); food waste (50%, ~50,000TPY)
- Mars (dog food), Bob Evans (sausage/biscuits/gravy), Coca-Cola, Tysons, P&G
- 5 mil gal. manure pit > irrigation water
- 1,000 kW of renewable electricity + heat > RNG (20-30% used on site)
- Cover crops, Poplar grove

Rockwood Farm in MA (small dairy→electricity)

- 400 dairy cows
- 450kW (336 homes)
- 2-3 truckloads of food waste/day from Coca-Cola, Agri-Mark & HP Hood dairy food processing waste, restaurant FOG…
- Farmer: “It’s keeping our farm going” (Before, farm elec. cost was $500-800/mo)
- Heat for hot water to sanitize milking equipment

Beginning Trends

Nutrient Recovery

Poultry Litter Projects

States: LCFS-like programs, and RNG offered to gas customers

Patrick Serfass
Executive Director
American Biogas Council

pserfass@ttcorp.com
(202) 640-6595