



Noblehurst Farms, Inc.

Animal Agriculture's Carbon Footprint: Managing for Our Future

Christopher Noble

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Today's Agenda

- Things we believe
- Our Core Business
 - Noblehurst Farms
- Value added investments
 - Craigs Station Ventures
 - Craigs Creamery
- Going Green
 - Noblehurst Green Energy
 - Natural Upcycling
 - Role of RNG in the NYS Dairy industry
- Discussion

Things We Believe

- We believe the future is incredibly bright in the Northeast U.S. for dairy farming
 - For all the reasons we can easily articulate
- However that bright future is predicated on achieving the following things:
 - Protecting our ability to operate at scale
 - Minimizing our impact on our neighbors
 - truck traffic, smells/odors, etc.
 - Connecting farms with local and regional consumers
 - Moving toward being a “net zero” farm

Noblehurst Farms and Affiliates



Who is Noblehurst Farms?

- Founded in 1960 with nine shareholders, including seven members of the Kenneth and Ethel Noble family and two key non-family employees
- Kenneth was the 4th generation to farm land in the vicinity of Linwood, New York.
 - Kenneth's great-great-grandfather was a Revolutionary war soldier from Connecticut that settled in the Genesee Valley after the war.
- The Noble family came to Linwood during the Irish potato famine in the 1840s along with many other immigrants



Noblehurst Farms today

- Now into its seventh generation of farming, with 40 shareholders including 5 of the original owners
 - Ranges in age from 27 to 92
 - Two major families and key employees
- The farm itself is a progressive, modern dairy operation with 1750+ milking cows and 1400 youngstock.
- Like many dairy farms in the Finger Lakes region, Noblehurst grows most of its own feed for its cows on 3,000 acres in Livingston, Genesee and Wyoming counties



Noblehurst Farms

- **From our mission statement:**

Noblehurst Farms shall focus on being a progressive and economically healthy agricultural operation that produces and markets quality products.

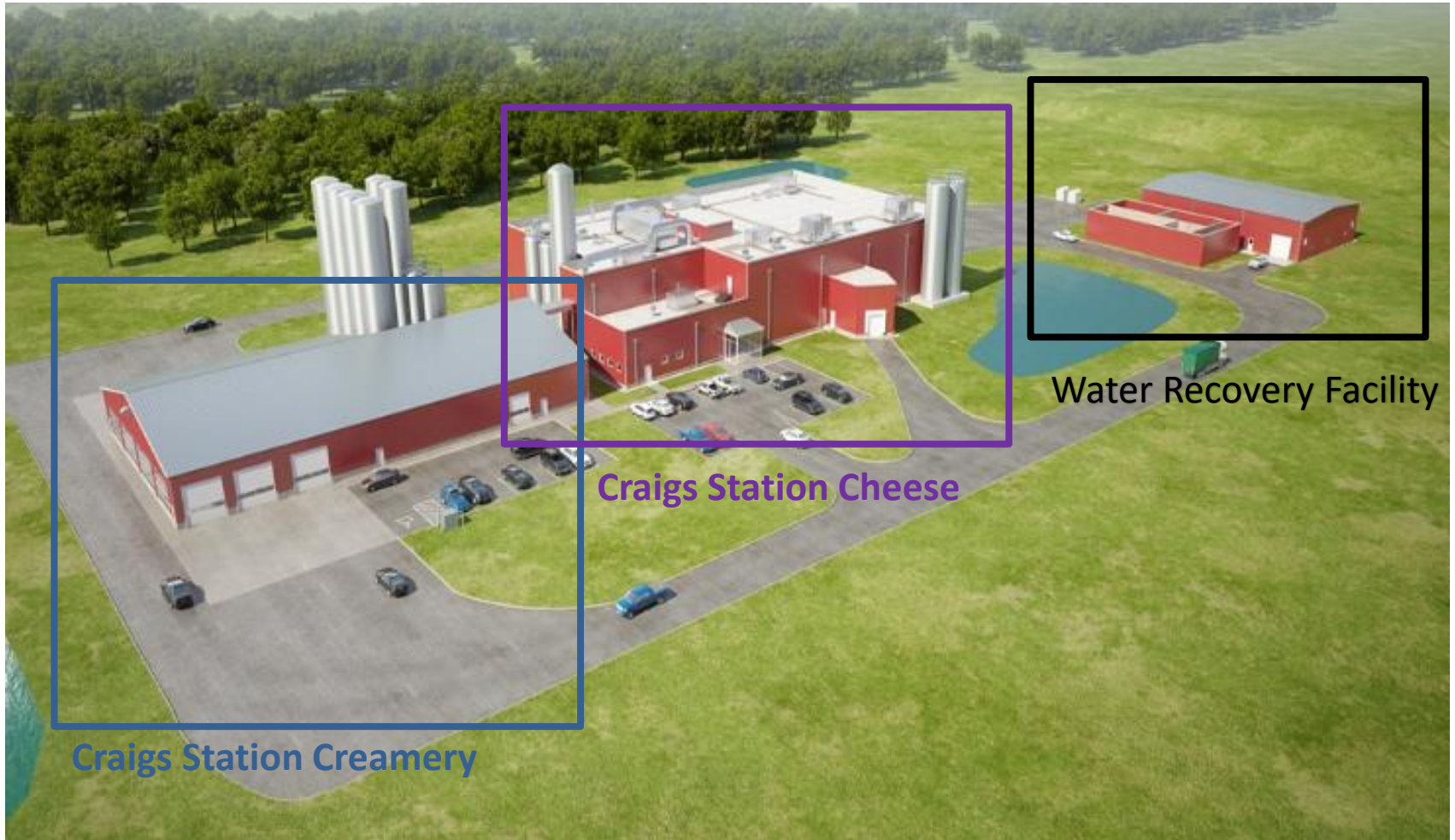
Other divisions under the Noblehurst Farms umbrella shall strive to provide products and/or services to the community in a reputable and exemplary manner.

Craigs Station Ventures

- **Family owned and operated dairy farms located in the western New York milkshed**
- **Producing high quality raw milk products**
- **Approximately 13,000 cows housed on dairies located within 30 miles of the plant**
- **Currently delivering more than 120,000 gallons of milk/day to local dairy processors**



Craigs Station Campus



Craigs Station Creamery

Craigs Station Cheese

Water Recovery Facility

Craigs Station Capabilities

Fluid Milk & Cream

- All fat levels of standardized milk
- – up to 40% Cream
- Milk blends up to 40% Butterfat
- Fortification available
- Super Kosher Milk
- rBST Free Milk
- OU Kosher
- Lactose Reduced/Free Milk
- Tote sales – 330 gallon totes
- Tanker sales
- Cold bowl separated
 - Reduced protein denaturing (standardized/skim)
 - Enhanced cream functionality

Cheese

- | American-Style: | Non-Traditional Types: |
|---|------------------------|
| • Cheddar: white or yellow, mild through sharp | • Mozzarella |
| • Colby, Colby/Jack | • Havarti |
| • Muenster | • Gouda |
| • Monterey Jack | • Muenster |
| • All of the above with inclusions (i.e. . Pepper Jack, Vegetable Blends; customer-specific products) | |

40# block packaging

Craigs Creamery

“We are a small group of **farmers** – who live and work on family owned dairy farms in Upstate New York. Our commitment to quality goes back generations.

With this expertise, we chose to create a new kind of dairy.

One that uses **locally sourced milk**.

With an eye toward **sustainability**.

Always adhering to **the highest standards** – our own.

This led to a simple idea.

To build a creamery...

Right here on our farm.

Craigs Creamery

It's here that we start with the freshest milk – milk that comes straight from our family farms – to make our cheese.”

Chris Noble - 7th generation Dairyman, Noblehurst Farms

FOUNDING FARM FAMILIES



NOBLEHURST FARMS

From waste to watts



COYNE FARMS

Nourishing families, nurturing the planet



MCCORMICK FARMS

Reducing, reusing and rethinking waste



BAKER BROOK DAIRY

Happy cows make quality milk



SYNERGY FARM

Friendly neighbors, enthusiastic advocates



LAWNEL FARMS

Connecting with consumers



MULLIGAN FARM

Protecting the land, ensuring the future



SOUTHVIEW FARM


Investing in the future


Craigs Creamery




Consumer **FEEDBACK** showed that label design **PRIMARILY COMMUNICATES**

 → Sense of place

 → Farmer owned

 → From pure high quality milk

 → Free of hormones

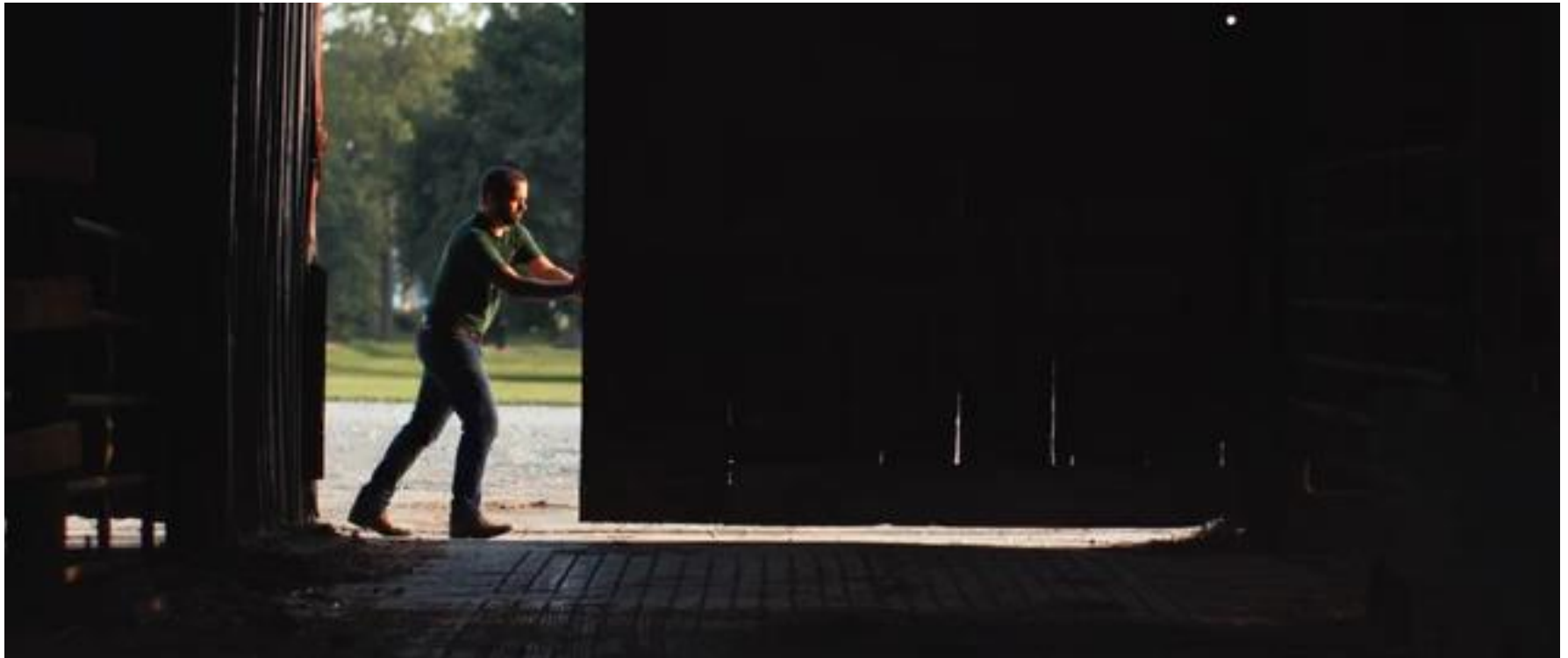
Craigs Creamery



Back label content TELLS THE BRAND STORY

-  → Proximity of creamery to farms
-  → Thoughtful farm practices
-  → Sustainability

Craigs Creamery



Noblehurst Green Energy



Noblehurst Green Energy

- One of the newest anaerobic digesters in NYS
 - Completed Fall 2014, interconnected to the grid April 7, 2015
- Drivers
 - Business diversification
 - Reducing dairy costs (lower electricity costs over time)
 - Eliminating smell in the manure
 - Providing service to on-site milk processing facility
- Goals
 - Self sufficiency – “standing on its own” financially
 - Income diversification (electricity and food waste)
 - Job creation

Current Process

Current Process:

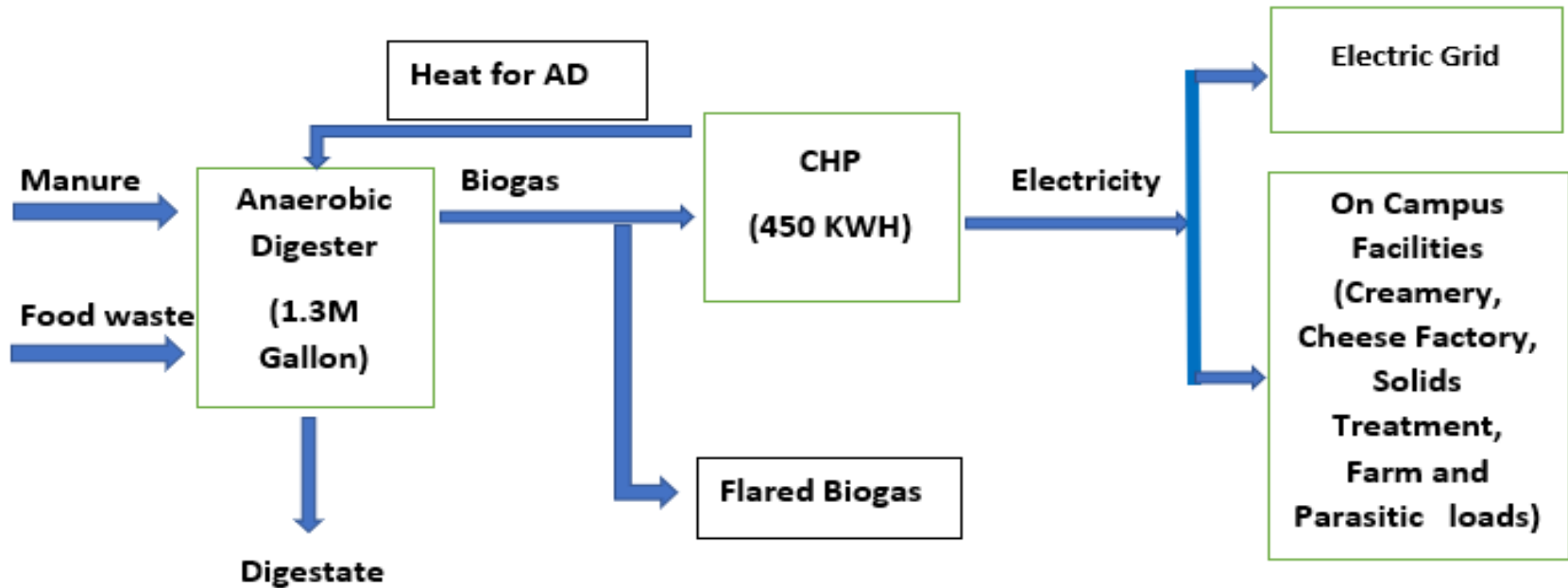


Figure 1: Current Process at NGE

Noblehurst Green Energy

- Current feedstocks
 - Manure from the 1750+ dairy cows at Noblehurst Farms
 - Committed high-strength dairy processing waste direct piped from Craigs Station Cheese facility
 - Additional acid whey and high-strength volumes direct piped from Craigs Station Creamery
 - Bulk tanker loads including condensed whey from Craigs Station Cheese and customers in the region
 - Source separated organics – up to 15 tons per day of clean, pre-consumer material delivered by Natural Upcycling
 - Packaged liquid and semi-solid organics – processing 20-30 tons per day of juices, soda, syrups, etc. delivered by Natural Upcycling

Natural Upcycling



NaturalUpcycling

CREATING A SUSTAINABLE FUTURE FOR OUR COMMUNITY

- Leading Regional Food Waste Recycling Business
- Created in March 2014 and Founded by
 - Harry Cohen – formerly of Total Organics Recycling of St Louis, MO
 - Christopher Noble – Noblehurst Green Energy of Linwood, NY
- Formed to Provide Securitized Source of Food Waste to Anaerobic Digesters and Compost Operations

Food Waste in the Big Picture

- 40% of all food in the United States is wasted
- In other words 36 million tons of food waste is generated annually yet only 3% is recovered/recycled
- Food waste is the second largest contributor to landfills in America behind paper
- Why is recycling food waste difficult?
 - Wet/messy – not sexy
 - Poor/lack of infrastructure to handle
 - Can be expensive
 - Trash companies not incentivized to segregate food waste
 - In the absence of regulation
 - In some cases they own landfills and want the methane

Types of Food Waste Collected

- Traditional Substrates
 - Food Processing residuals (mostly for animal feed)
 - Bulk Tanker loads
 - Food and Dairy Processing (whey, food manufacturing by-products, etc.)
 - Slaughterhouse Waste (meat renderings)
 - FOG (Fats, Oils, Greases) and Glycerin
- New/Emerging “Challenging” Substrates
 - Source-Separated Organics (SSO)
 - Pre-consumer (grocery stores, food processing, cafeterias)
 - Post-consumer food scraps
 - Packaged Food Waste
 - Off-spec, mislabeled bottled products
 - Semi-solid (viscous products that can be cut with water)
 - Canned and chunky (e.g green beans in tin cans)

Challenging Substrates

- New/Emerging “Challenging” Substrates



Organics Pickup Service

- Participating businesses place food waste in color-coded bins located in kitchens or food prep areas.
- Once bins are loaded, they are wheeled to a back dock or other convenient location to be picked up.
- These bins are serviced up to 7 days per week by a specialty vehicle and cleaned by a high pressure system all contained within the truck.
- Sanitized containers limit odor and provide a sterile work environment.



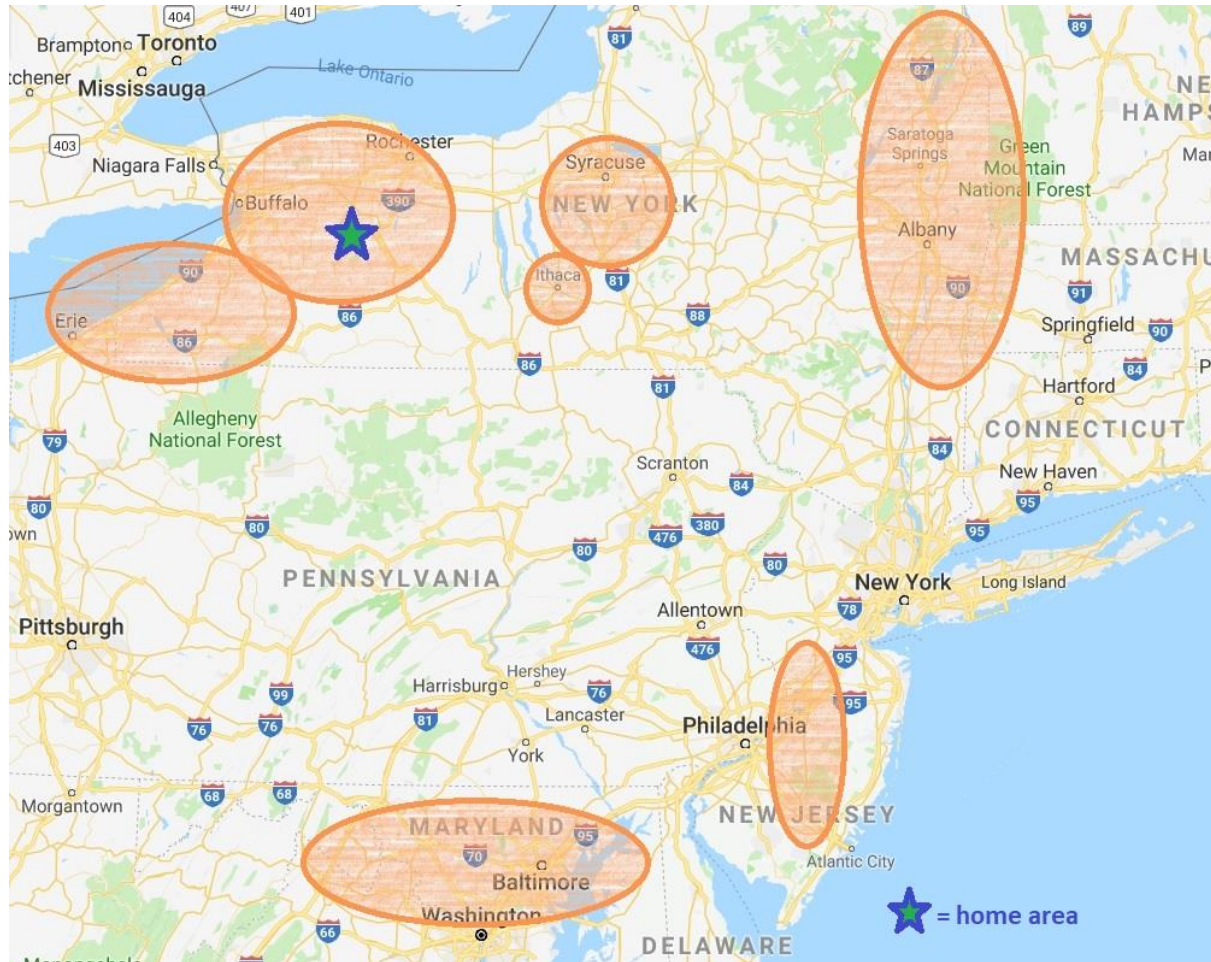
What Can Be Upcycled?



The Catch of the Day



Where we are – SSO collection



What We Do Well

- Align with companies that are leaders in sustainability
- Reduce methane gas emissions & create renewable energy
- Communicate with our partners and customers
- Core value of doing the right thing
- Share the message of keeping food waste out of landfills



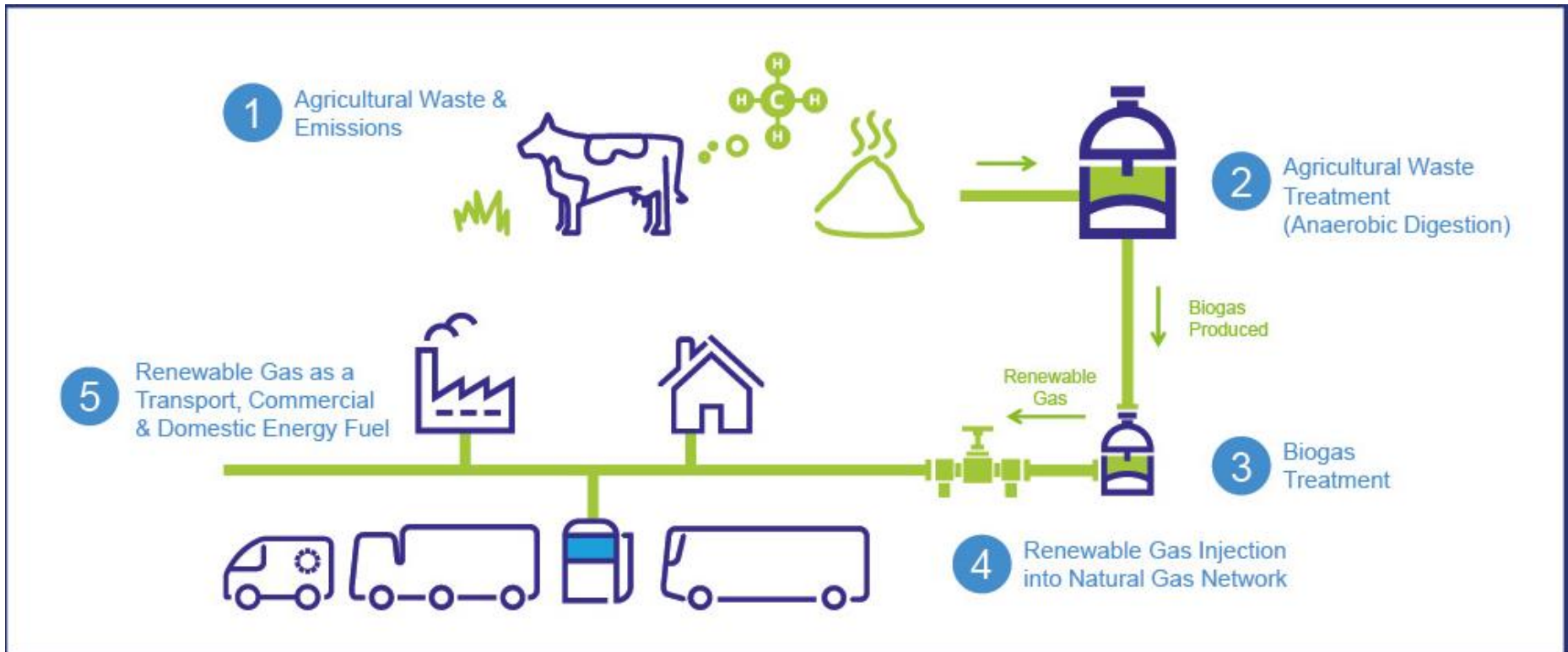
Making Green Energy



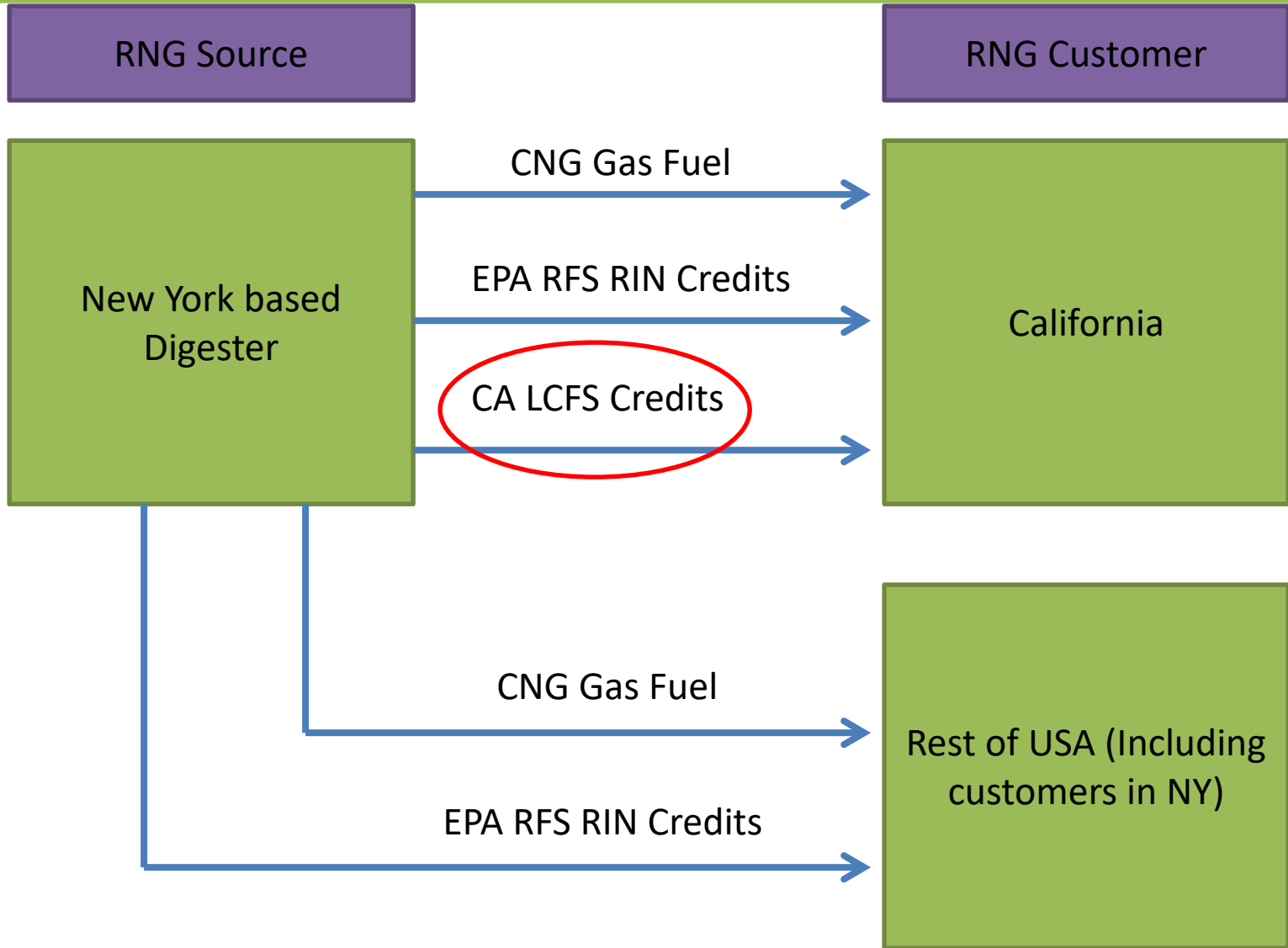
In the USA
farmers are developing
innovative ways to work with
renewable sources of energy

Other Opportunities – NY RNG

Farm to Truck



NY to CA & Rest of USA



First dairy RNG installation in NY



Image courtesy of Michelle Miller, FarmBabe, AgDaily

Discussion Points

- Measuring your carbon footprint is a complex topic, particularly for the dairy industry
 - Consumers (unfortunately) often don't have the patience for the science
- Environmentalism and sustainability often get lumped in with the plant-based movement
 - Which has its share of animal agriculture critics
 - It's also an emotional issue which can be helpful to dairy (think pasturing cows and red barns)
 - ...but doesn't help explain modern dairy farming
- As farmers do you want consumers to think that you're just like them... or not like them?

Positives

- Dairy industry is actually doing a great job in this department
- Monetizing carbon reduction through RNG deployment has made it even easier to be Green
- Consumers ARE (more than ever) interested in learning about agriculture
 - Once you get consumers out to the farm, their perspective almost immediately changes
 - In lieu of that, vignettes are most effective, especially those that crossover into their lives

Questions?



cnoble@linwoodag.com