



U.S. Dairy 2050 Goals and Net Zero Initiative

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VISION U.S. DAIRY IS AN ENVIRONMENTAL SOLUTION

GOALS *By 2050, U.S. dairy collectively commits to:*

- BECOME CARBON NEUTRAL OR BETTER
- OPTIMIZE WATER USE WHILE MAXIMIZING RECYCLING
- IMPROVE WATER QUALITY BY OPTIMIZING UTILIZATION OF MANURE AND NUTRIENTS

OVERARCHING STRATEGIES

FOR FIELD AND FARM

Net Zero Initiative
A five-year collaboration of dairy organizations to develop a pathway to make sustainability practices more accessible and affordable to farms of all sizes. Through research, on-farm pilots and new market development, NZI looks to accelerate progress in the areas of feed production, enteric methane, energy efficiency and manure management.

FOR PROCESSORS

Processor Working Group
Led by the Innovation Center, a working group of more than 40 participants representing over 20 processing organizations convenes regularly and engages in facility-focused workstreams for waste, water, packaging, and GHG emissions to drive action and demonstrate progress towards the goals.

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US Dairy Collective Environmental Stewardship Goals

Cradle to Farm-Gate Print

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Processor Print

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Cradle to Processor Gate

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NZI: What it is and What it isn't

Not every farm will reach net zero status - NZI is a **collective effort of all farms**

NZI is not mandatory – it is a pathway for farms to **voluntarily contribute**

NZI is not just for big farms – it will open opportunities for **farms of all sizes** to adopt technologies and practices

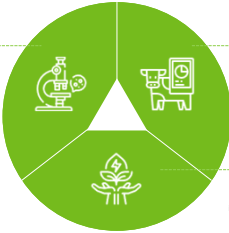
NZI is not one size fits all – it considers a range of technologies and practices on **farms of varying sizes, designs and geographies**

NZI is not immediate – it's looking to **2050 and beyond**



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Core Tracks



Research, Analysis & Modeling: Groundwork

Fill key research gaps and improve measurement to help the dairy farming community use science-based models and scenario planning to analyze the environmental and economic impacts of various efforts, including:

- Cow care and efficiency
- Feed production
- Manure handling and nutrient use
- Energy efficiency & renewable energy generation

Viability Study: Dairy Scale For Good

Through partnerships with 5 farms, prove the economic viability of a comprehensive suite of field and farm practices and technologies and establish market-based approaches for reaching net zero emissions, improved water quality and increased farmer livelihood.

Adoption: Collective Impact

Drive broad, voluntary farmer adoption of proven best practices, technologies and combinations of both and share the positive impact that farms of varying geographies, sizes and capabilities are making together on the environment.

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Four Environmental Prints of a Dairy and Mitigation Options

Estimated GHG contribution of each "print":

- Feed (26%)
- Enteric (35%)
- Manure (33%)
- Energy (6%)

FEED

- No-till farming
- Cover crops
- Nutrient management
- Precision agriculture

ENTERIC METHANE

- Diet management
- Genetic improvement
- Cattle management
- Cow comfort and well-being
- Feed additives

MANURE

- Manure storage emissions
- Nutrient and water management
- Anaerobic digestion
- Renewable fertilizers

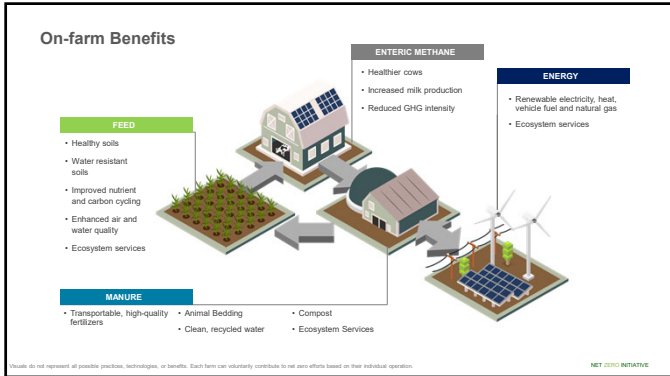
ENERGY

- Renewable energy:
 - Renewable biogas from manure
 - Renewable energy from wind and solar sources
- Energy efficiency:
 - LED lighting
 - Variable speed pumps
 - Milk pre-cooling technology
 - Soft start motors
- Replacement of fossil-fueled engines with electric motors

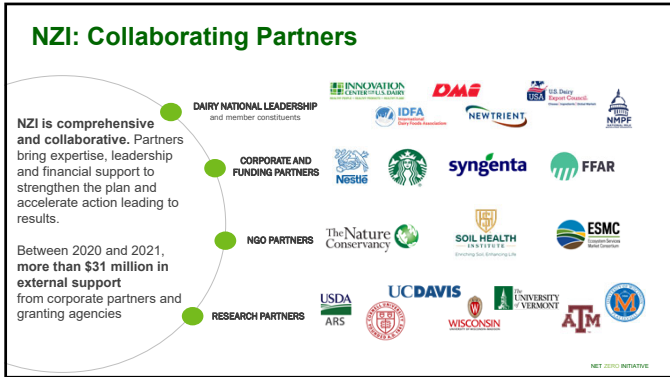
Measurement is a critical element to provide scientific evidence and demonstrate progress.

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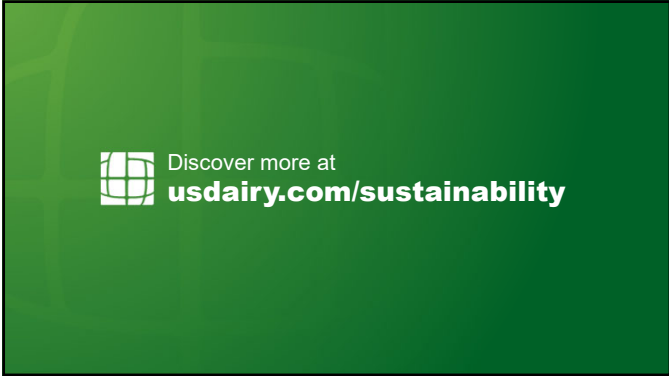
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