

2023



# CALIFORNIA DAIRY'S SUSTAINABILITY JOURNEY

WORLD-CLASS LEADERSHIP | MEASURABLE PROGRESS | A BRIGHTER FUTURE

# California

As the nation's largest dairy producer since 1993, California now makes nearly 1/5<sup>th</sup> of all the milk in the United States, nourishing consumers at home and around the world. Every product stamped with the Real California Milk seal is made with wholesome milk from the Golden State, where we believe in real food made by real farm families who are focused on a cleaner, more sustainable future. For California dairy families, sustainability doesn't mean just being good enough – it means being the best and continuing a legacy of producing food that's good for people and the planet, now and for generations to come.



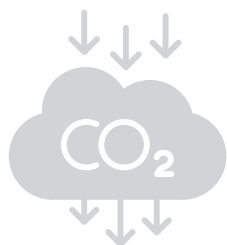
California dairies' carbon footprint has been shrinking for decades – 45% over the past 50 years (1964-2014) – and is among the **smallest carbon footprint per gallon of milk produced in the world**. But dairy farmers aren't resting on their laurels. They continue to **reduce climate emissions** and today are more than halfway to achieving a statewide goal of reducing manure methane emissions an **additional 40% by 2030**.

Just how are dairy farmers reducing their carbon footprint? A key strategy involves capturing methane produced by cow manure in a "digester" and converting it into clean energy for vehicles, homes and businesses. This is a win-win for the environment, preventing methane from escaping into the atmosphere while also displacing fossil fuels as an energy source. As long as we have cows, consumers have access to an **abundant clean low-carbon, renewable, energy source**.





# OUR CLIMATE COMMITMENT

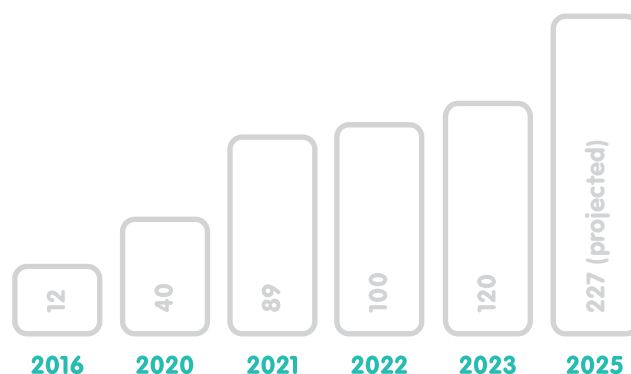


California dairy digester development is booming – **expanding more than eight times in size since 2016**. The **reduction of greenhouse gas emissions** from these projects is estimated to be more than 55 million metric tons of CO<sub>2</sub>-equivalent over the next 25 years. That's equal to the greenhouse gas emissions from more than 11.8 million passenger vehicles, or the CO<sub>2</sub> emissions from electricity used by 10.7 million homes for a year.

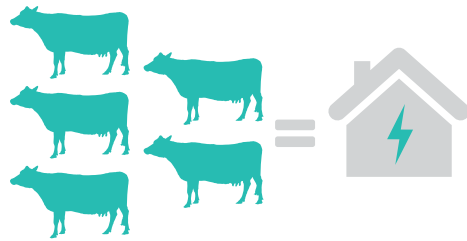


## California Dairy DIGESTER DEVELOPMENT

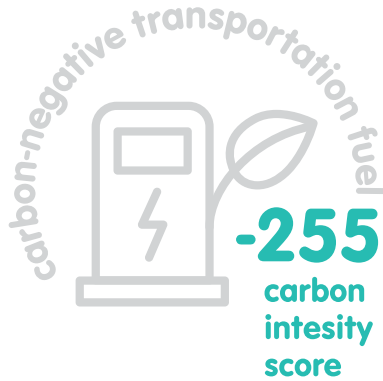
(as of summer 2023)





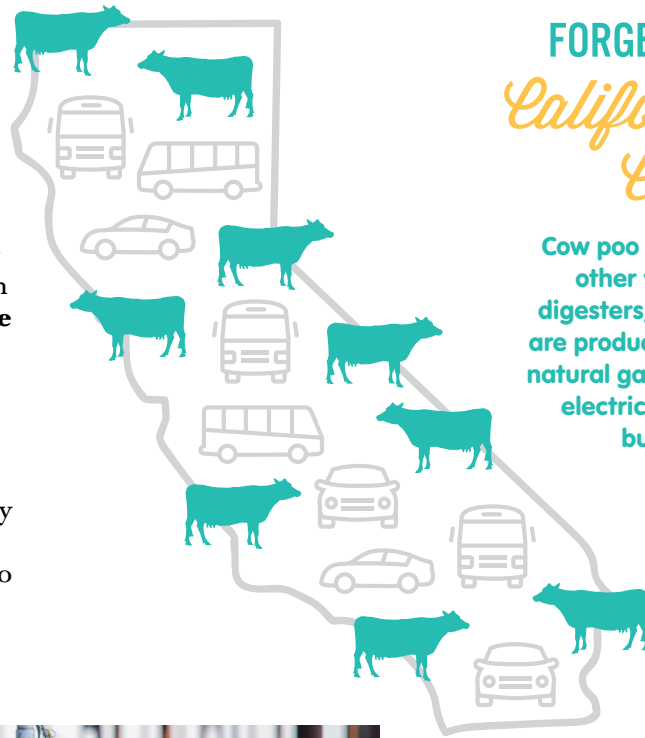


5 cows can power one house for a year



Renewable natural gas produced from dairy biogas is a **carbon-negative transportation fuel**, earning a carbon intensity score of -255 (and in some instances higher) from the California Air Resources Board. By comparison, the carbon intensity score of an electric vehicle is 29, making dairy biofuel **nearly 10 times more effective** at reducing carbon than even electric vehicles. In addition to filling up vehicles, dairy methane can be used to create electricity for homes and communities. Methane produced by just five cows can power one house for a year, which means that **California dairy farms have the potential to power thousands of homes across California annually**.

Dairies are also using the warm California sun to power their farms. More than **150 California dairy farms generate solar energy**, reducing their use of fossil fuel-based energy and producing more than 190 million kWh of energy annually — enough to meet the **electricity needs of 32,000 homes**. In Tulare County — the nation's largest dairy county — **74 dairy solar projects** produce the amount of energy equivalent to the **electricity needs of more than 20,000 homes**.



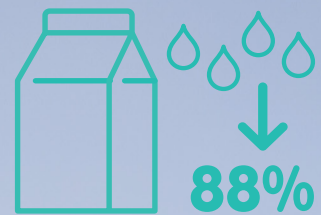
**FORGET HORSEPOWER**  
*California's got*  
*Cowpower!*

Cow poo fuels 15,000 buses and other vehicles. Through dairy digesters, California dairy farms are producing enough renewable natural gas (RNG) and renewable electricity to fuel 3,456 transit buses and 12,399 electric vehicles annually.





# WATER WISE

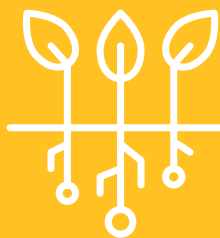


decrease in water use to  
produce a unit of milk

The water footprint of a glass of California milk has been shrinking for decades – and not by just a little. The amount of water used to produce a unit of milk has decreased **more than 88%** compared to 50 years ago. Water recycling is commonplace on California dairies, with the **same precious drop of water used up to four times** on the farm. Clean water is used to wash the milking parlor, equipment and to cool milk tanks. This water is then recycled to wash cows and stored in a holding pond, to be reused multiple times to flush manure from barn floors. Water from the holding pond – rich with plant nutrients from natural dairy manure – is then used to fertilize feed crops for cows. This recycling process **substantially reduces the amount of fresh water needed** and **reduces the need for synthetic plant nutrients**, further reducing the carbon footprint of dairy farms by **avoiding some of the greenhouse gas emissions** associated with fertilizer production. Manure also builds healthy soils by adding organic matter. **Just a 1% increase in soil organic matter can increase soil's water holding capacity by 3.7%.** The net effect is less water used to grow the same crop.



A growing number of California dairies are experimenting with drip irrigation to grow feed crops for their cows – and results are promising. Early-adopting dairy farmers are getting more crop per drop, consistently **using 47% less water while increasing crop health and yields.** In a three-year field study of more than 20 dairy farmers, more than 3.1 billion gallons of water was saved – enough to meet the annual water needs of 100,000 California residents.



irrigation  
in action

water is delivered  
right to plant roots







# CARING FOR OUR COWS

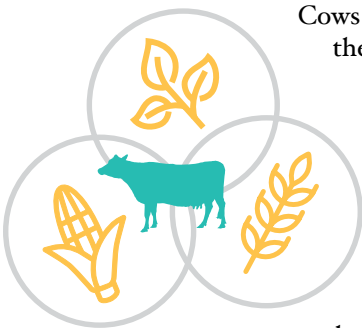
The highest priority for California dairy farmers is the health, comfort and well-being of the animals entrusted to their care.



Cow care on California dairies is built upon the foundation of providing **quality nutrition, comfortable housing, professional veterinary care** and routine **employee training**. Additionally, California dairies support standards and performance transparency through third party evaluation programs like the National Dairy Farmers Assuring Responsible Management (FARM) Program or other programs such as Validus or American Humane. Today, more than 99% of the U.S. milk supply comes from participating farms. From the beginning, California has played a leading role in FARM, becoming the first state to adopt the program in 2010.



The FARM Program includes a manual of **best practices** for every cow and calf on the farm. Each dairy farm is assessed through an in-person, on-farm evaluation to ensure that program standards are being met, with annual independent, third-party evaluations used to **ensure program integrity**. For farms that don't meet the standards, a mandatory corrective action plan is issued. In the event issues are not resolved, the sale of milk to FARM-certified processors is no longer allowed.







Cows are great at upcycling plant nutrients, as they create nutritious food for humans. Common on California dairies is the feeding of a total mixed ration or **TMR**. This is a blend of different feedstuffs necessary for optimal cow health and nutrition, which can include alfalfa hay, corn, wheat and other grass-based plants. Unique to California TMRs is the high percentage of byproducts included from the other diverse California crops, such as **almond hulls, citrus and tomato pulp, culled carrots** and other similar products that are not wanted for human consumption but make healthy, nutritious feed for cattle. California dairies **meet more than 40% of their cows' feed needs** using these byproducts, which contributes to overall cow nutrition, and reduces the need to grow additional crops, thus **saving water, land, energy and emissions**. This keeps 15 tons, or over 1,000 garbage trucks, of unusable food and fiber byproducts out of landfills every day.





Real California dairy products live up to the sustainability moniker. In addition to the environmental gains made by California dairy farmers, consumers enjoy the **nutrient-dense qualities** of California dairy to **sustain the health and wellness** of their families at an affordable price. Natural dairy milk is rich in vitamin A, vitamin D, calcium, high-quality protein and nine essential nutrients. Recent research shows that including dairy in the diet may reduce the risk of heart disease, increase bone mineral density and decrease the risk of diabetes.

NUTRIENT INFORMATION BASED ON 1 CUP (8 OZ.)	   			
	LOW-FAT MILK	SOY	ALMOND	OAT
CALORIES	110	110	60	120
PROTEIN	8g	8g	1g	3g
TOTAL FAT	2.5g	4.5g	2.5g	5g
CARBOHYDRATES	12g	9g	8g	16g
CALCIUM*	30%	45%	45%	25%
PHOSPHORUS*	25%	25%	N/A	20%
POTASSIUM*	10%	10%	1%	8%
RIBOFLAVIN*	25%	30%	30%	45%
VITAMIN B12*	20%	50%	50%	50%
VITAMIN D*	25%	30%	25%	20%
COST PER SERVING**	\$0.35	\$0.57	\$0.50	\$0.71
COST PER (G) OF PROTEIN**	\$0.04	\$0.07	\$0.50	\$0.24

■ NATURALLY OCCURRING/NOT ADDED \*% DAILY VALUE \*\*IRI 10/8/23

FOR FULL INFORMATION PLEASE VISIT: [CALIFORNIADAIRYPRESSROOM.COM/BEVCOMPARE](http://CALIFORNIADAIRYPRESSROOM.COM/BEVCOMPARE)

# WHOLESOME PRODUCTS

California dairy farmers are focused on sustainability throughout the supply chain, including investments in research to increase recyclability of product packaging. In 2021, the industry launched the Recycle the Jug education program to build awareness of and increase recycling rates for gallon and half gallon HDPE (#2) plastic milk jugs, one of the most widely accepted and desired plastics in recycling because it can be reused up to seven times.

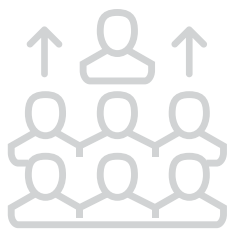




# PROSPEROUS COMMUNITIES



## Dairy-Related ECONOMIC ACTIVITY (2018)



**\$57.7 billion = 180,000 jobs**

California dairy delivers much more than an important food source – it also **creates jobs** and **economic activity** in local communities throughout the Golden State. In addition to helping consumers prosper with access to affordable, nutrient-dense healthy food choices, the ripple effect of job tax revenue from California dairy **helps fund** K-12 education, public transportation and local health services. Dairy related economic activity in 2018 created jobs throughout California, with the vast majority located in California's bountiful San Joaquin Valley.

A healthy California dairy community also keeps family farmers thriving. Many of these families have raised and cared for cows for multiple generations.

**99%** family-owned  
and -operated



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