



AEMETIS

## Aemetis, Inc. (NASDAQ: AMTX)

Leading the Production of Below Zero Carbon Intensity Renewable Natural Gas and Renewable Fuels For Airplanes, Trucks, Cars and Electric Vehicles

February 20, 2024

# Disclaimer

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## Forward-Looking Statements

This presentation contains forward-looking statements, including statements regarding our assumptions, projections, expectations, targets, intentions or beliefs about future events or other statements that are not historical facts. Forward-looking statements in this presentation include, without limitation, statements relating to our five-year growth plan, future growth in revenue, net income and adjusted EBITDA, the market size for our products, expansion into new markets, development of new projects and facilities, commercializing and scaling new technologies, the ability to obtain sufficiently low Carbon Intensity scores to achieve below zero carbon intensity transportation fuels, planned timelines for future activities or growth, and rates of growth. Data and events labeled with dates in 2024 or later are forward-looking statements. Words or phrases such as “anticipate,” “may,” “will,” “should,” “believe,” “estimate,” “expect,” “intend,” “plan,” “predict,” “project,” “target,” “will likely result,” “will continue,” “enable” or similar expressions are intended to identify forward-looking statements.

These forward-looking statements are based on current assumptions and predictions and are subject to numerous risks and uncertainties. Actual results or events could differ materially from those set forth or implied by such forward-looking statements and related assumptions due to many factors, including, without limitation, competition in the ethanol, biodiesel and other industries in which we operate, commodity market risks including those that may result from current weather conditions, financial market risks, customer adoption, counterparty risks, risks associated with changes to federal or state policy or regulation, and other risks detailed in our reports filed with the Securities and Exchange Commission (the “SEC”), including our Annual Reports on Form 10-K and other filings with the SEC. We are not obligated, and do not intend, to update any of these forward-looking statements at any time unless an update is required by applicable securities laws.

## Non-GAAP Financial Information

We have provided non-GAAP measures as a supplement to financial results based on GAAP because management believes these non-GAAP measures serve as a proxy for the Company's source or use of cash during the periods presented. Adjusted EBITDA is defined as net income/(loss) plus (to the extent deducted in calculating such net income) interest expense, loss on extinguishment, income tax expense, intangible and other amortization expense, accretion expense, depreciation expense, and share-based compensation expense, and may include other factors.

Adjusted EBITDA is not calculated in accordance with GAAP and should not be considered as an alternative to net income/loss, operating income or any other performance measures derived in accordance with GAAP, or to cash flows from operating, investing or financing activities as an indicator of cash flows or as a measure of liquidity. Adjusted EBITDA is presented solely as a supplemental disclosure because management believes that it is a useful performance measure that is widely used, is a useful supplement to GAAP financial measures, and management uses it for reviewing financial results and for budgeting and planning. Adjusted EBITDA measures are not calculated in the same manner by all companies and, accordingly, may not be an appropriate measure for comparison.





# Aemetis at a Glance

## An integrated energy transition platform

### Key Highlights

**Public company** listed on NASDAQ: AMTX

**2 operating biofuel production plants** with more than 120 million gallons of capacity

**8 dairy RNG digesters** with 36 mile biogas pipeline built and 40 dairies signed

**Large biodiesel producer in India** with expansion including sustainable aviation fuel

Developing **SAF/RD production facility** with 78 million gallons of annual capacity

**\$3.8 billion** of signed SAF offtake agreements with 10 large airlines

#### Mission

Replace high carbon intensity petroleum products with **Below Zero renewable fuels and byproducts** to reverse Climate Change caused by greenhouse gases warming our planet

#### Strategy

Lead the renewable fuels industry transition to **Below Zero Carbon Intensity** biofuels from nonfood, lower cost, waste feedstock sources to maximize California Low Carbon Fuel Standard (LCFS), US Renewable Fuel Standard (RFS) and IRA credit values

### Segment Summary



#### Dairy RNG

- Project to build and operate biomethane digesters at 75 dairy farms in CA connected via biogas pipeline to produce negative carbon intensity dairy Renewable Natural Gas (dRNG)



#### Renewable Jet / Diesel

- Engineering underway for renewable Jet / Diesel plant in CA with production capacity of 78 mgy of Sustainable Aviation Fuel (SAF)
- Acquired site and received primary permits (CUP/CEQA)



#### California Ethanol

- Own and operate 65 mgy renewable ethanol production facility in Keyes, California
- Approximately two million pounds per day of animal feed supplied to ~100,000 dairy cows at ~80 local dairies



#### Carbon Capture

- Project to capture, dehydrate, compress and sequester CO<sub>2</sub> from Aemetis ethanol, biogas, SAF/RD and third parties
- Permit received to drill characterization well at Riverbank, California CO<sub>2</sub> injection well site



#### India Biodiesel

- Own and operate a 60 mgy biodiesel plant, a 50 mgy refined tallow plant and glycerin facility in Kakinada, India
- Plans to expand to 100 mgy in 2025



# Third Generation Technology to Reverse Climate Change

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## **1<sup>st</sup> Generation Renewable Energy = Use the Sun's energy**

Solar, Wind, Hydro and Nuclear **do not absorb carbon** from the atmosphere. These energy sources slow the rate of heating the Earth as coal and natural gas plants continue to operate globally.

## **2<sup>nd</sup> Generation Renewable Energy = Use the Sun's Energy and Absorb CO<sub>2</sub>**

Renewable fuels use large scale agriculture to absorb solar energy and CO<sub>2</sub> in photosynthesis. Agricultural products and wastes are used to produce renewable diesel, ethanol, biodiesel, and aviation fuel. The renewable CO<sub>2</sub> is emitted during production.

## **3<sup>rd</sup> Generation Renewable Energy = Use Sun's Energy, Absorb and Sequester CO<sub>2</sub>**

Producing renewable fuels with Carbon Capture & Sequestration (CCS) siphons carbon from the atmosphere into crops that are converted into renewable fuels, then the solar energy is released as transportation energy while the CO<sub>2</sub> from biofuels production is injected underground.

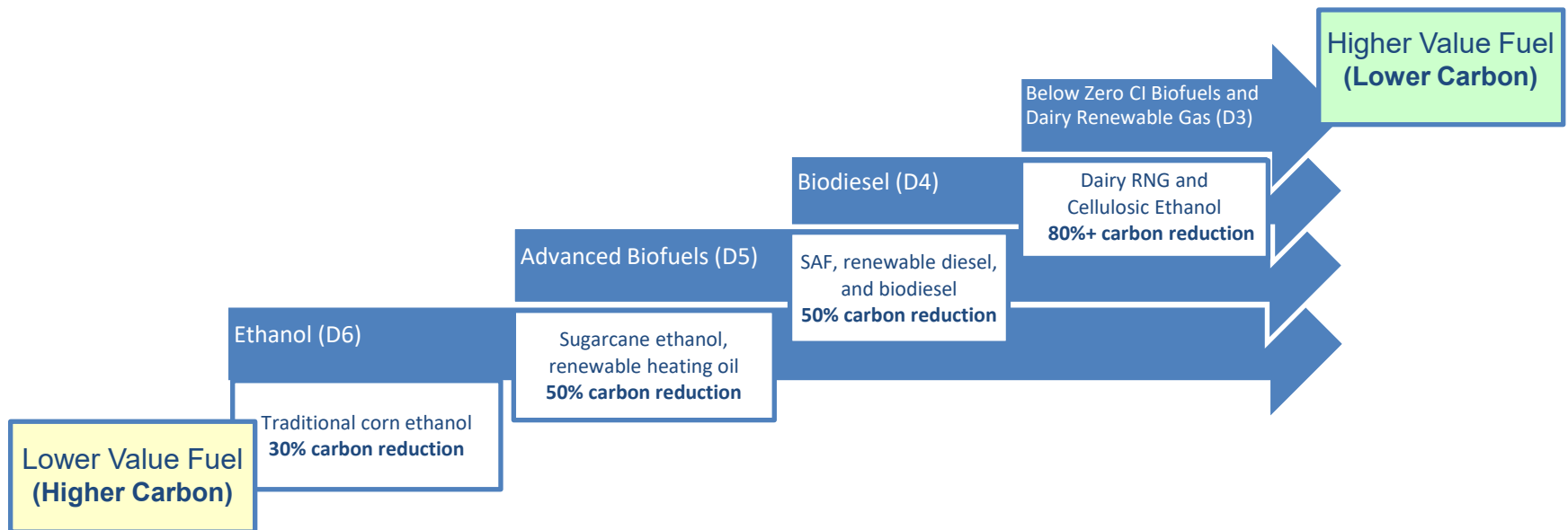
**3<sup>rd</sup> Generation Renewable Energy maximizes California Low Carbon Fuel Standard (LCFS), US Renewable Fuel Standard (RFS), Blenders Tax Credit (BTC), and IRA tax credit values.**

These regulations are an objective measure of the positive impact of each project on reversing Climate Change.



# Federal: RFS Below Zero Carbon Intensity Market Opportunities

- Federal Renewable Fuel Standard (RFS) requires oil refiners and other obligated parties to use increasing amounts of renewable fuels (replacing fossil fuel) for transportation in the United States
- Renewable fuels with below zero carbon intensity, such as dairy biogas and cellulosic hydrogen from orchard waste, generate more revenues than traditional renewable fuels that have higher carbon intensity



Economic incentives created by state and federal regulatory frameworks support the production of renewable natural gas (RNG) and advanced biofuels from non-food feedstocks by providing valuable renewable fuel credits including California LCFS credits, federal RFS RINs, and Inflation Reduction Act (IRA) tax credits. Other states are now adopting carbon reduction programs.

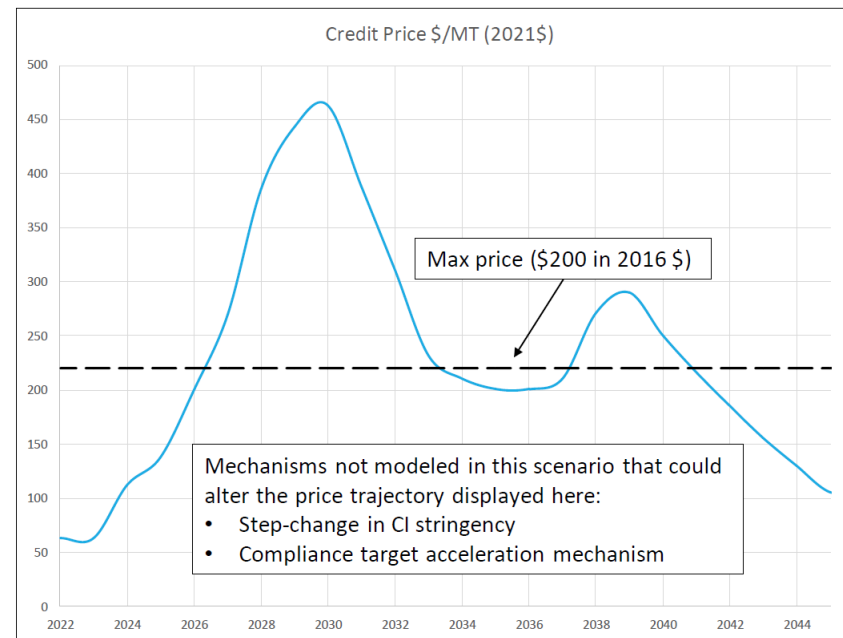


# California: LCFS Below Zero Carbon Intensity Market Opportunity

- California Low Carbon Fuel Standard (LCFS) requires annual reductions in the carbon intensity of all fuels sold
- In 2024, the California Air Resources Board (CARB) is expected to adopt regulations to reduce the average carbon intensity by 30% or more by year 2030 and to accelerate the rate of reduction, expanding demand for credits generated by low carbon fuels and significantly increasing LCFS credit prices

- LCFS credit prices are expected to be strong through 2045 due to increased compliance target stringency
- Maximum credit price shown in dashed line prevents dramatic price spikes; other mechanisms can also help
- Strong price signal expected to drive investment in new crediting opportunities, with downward pressure on prices over time
- High degree of uncertainty when forecasting to 2045

## Preliminary Credit Price Estimates



CARB presentation slide 51 from Feb 22, 2023, public presentation projecting LCFS credit prices through year 2045

51



# Highly Experienced Management and Board of Directors



**Eric McAfee - Chairman of the Board and CEO**

- Founder of Aemetis (NASDAQ: AMTX) and co-founder of \$1.6 billion revenues Pacific Ethanol (Now NASDAQ: ALTO)
- Founding shareholder of oil production company Evolution Petroleum (NYSE: EPM)
- Founded eight public companies and funded twenty-five private companies as principal investor



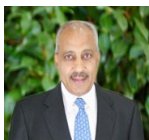
**Todd Waltz - EVP and CFO**

- Joined Aemetis in 2007; leads accounting, finance, audit, SEC compliance, and public reporting for Aemetis
- Served in senior financial management roles with Apple for 12 years
- Ernst & Young CPA



**Andy Foster - EVP and President, Aemetis Advanced Fuels**

- Joined Aemetis in 2006; leads North American renewable fuels businesses
- Senior executive at three Silicon Valley tech companies
- Served in the George H.W. Bush White House (1989-1992) as Associate Director of the Office of Political Affairs
- Deputy Chief of Staff for Illinois Governor Edgar for five years



**Sanjeev Gupta - EVP and President, Aemetis International**

- Joined Aemetis in 2007; leads India renewable fuels business
- Previously head of petrochemical trading company with \$250 million of annual revenue and offices on several continents



**Mike Rockett, Esq. – EVP, General Counsel and Corporate Secretary**

- Joined Aemetis in 2023 after five years as outside legal advisor; leads corporate and project development legal team
- Corporate and environmental attorney with extensive project development experience
- Previously with U.S. Dept. of Justice, large law firm, and 15 years at environmental technology company

**Lydia Beebe, Esq. – Former 38 years at Chevron, including Senior Chevron Corporate Officer for 20 years**

**John Block – Former U.S. Secretary of Agriculture from 1981-86 under President Reagan**

**Fran Barton – Former CFO of five high tech companies with revenues more than \$1 billion**

**Naomi Boness, PhD – Head of Stanford Univ Natural Gas Initiative; former Chevron project planning and strategy**

**Timothy Simon, Esq. – Former California Public Utilities Commission board member; natural gas industry consultant**

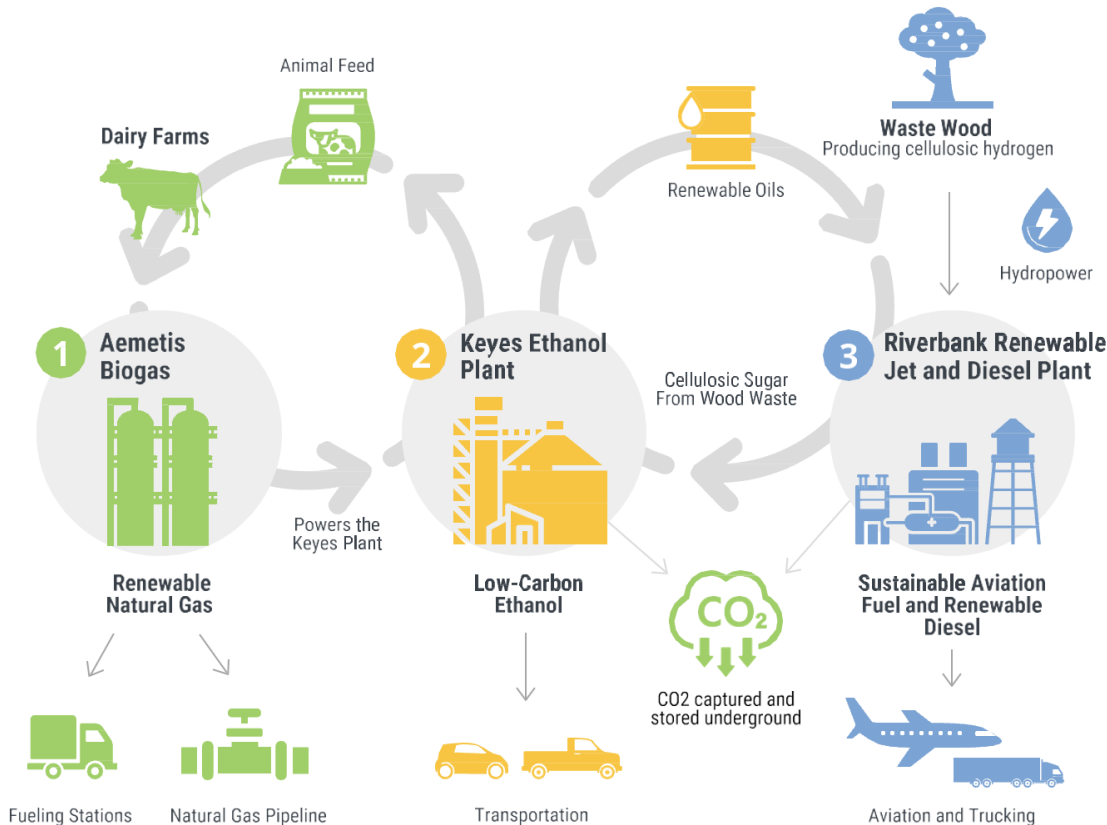
Board of  
Directors

Our highly experienced management team and board of directors have extensive industry knowledge, regulatory relationships, project development and operational experience



# Aemetis Circular Bioeconomy

Integrated value chain supports growth while minimizing technology and execution risk








## Aemetis Leverages Existing Plants, Infrastructure and Relationships to Expand Low Carbon Biofuel Production

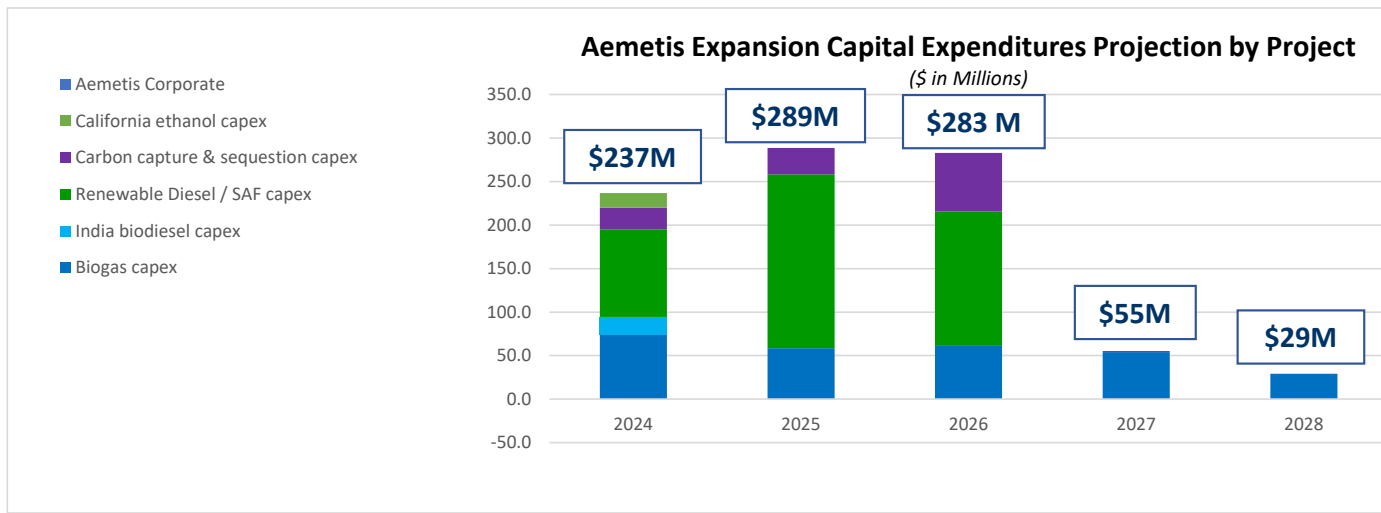
- 1 Aemetis Biogas**  
 Dairy cows consume the animal feed from the Aemetis plant, producing manure which naturally creates biomethane. Aemetis dairy digesters capture biomethane and pipe the gas to the Aemetis plant for conversion into renewable natural gas (RNG). Avoiding the release of methane into the atmosphere, carbon negative RNG is used as transportation fuel, reducing consumption of petroleum diesel.
- 2 Keyes Ethanol Plant**  
 The Keyes facility produces about 65 million gallons per year of ethanol, animal feed and distillers corn oil. The animal feed produced at the ethanol plant feeds about 100,000 local dairy cows at approximately 80 dairies.
- 3 Riverbank Renewable Jet & Diesel Facility**  
 Renewable oils and waste products are used as a feedstock for the production of renewable jet and diesel fuel using zero carbon hydroelectric power.



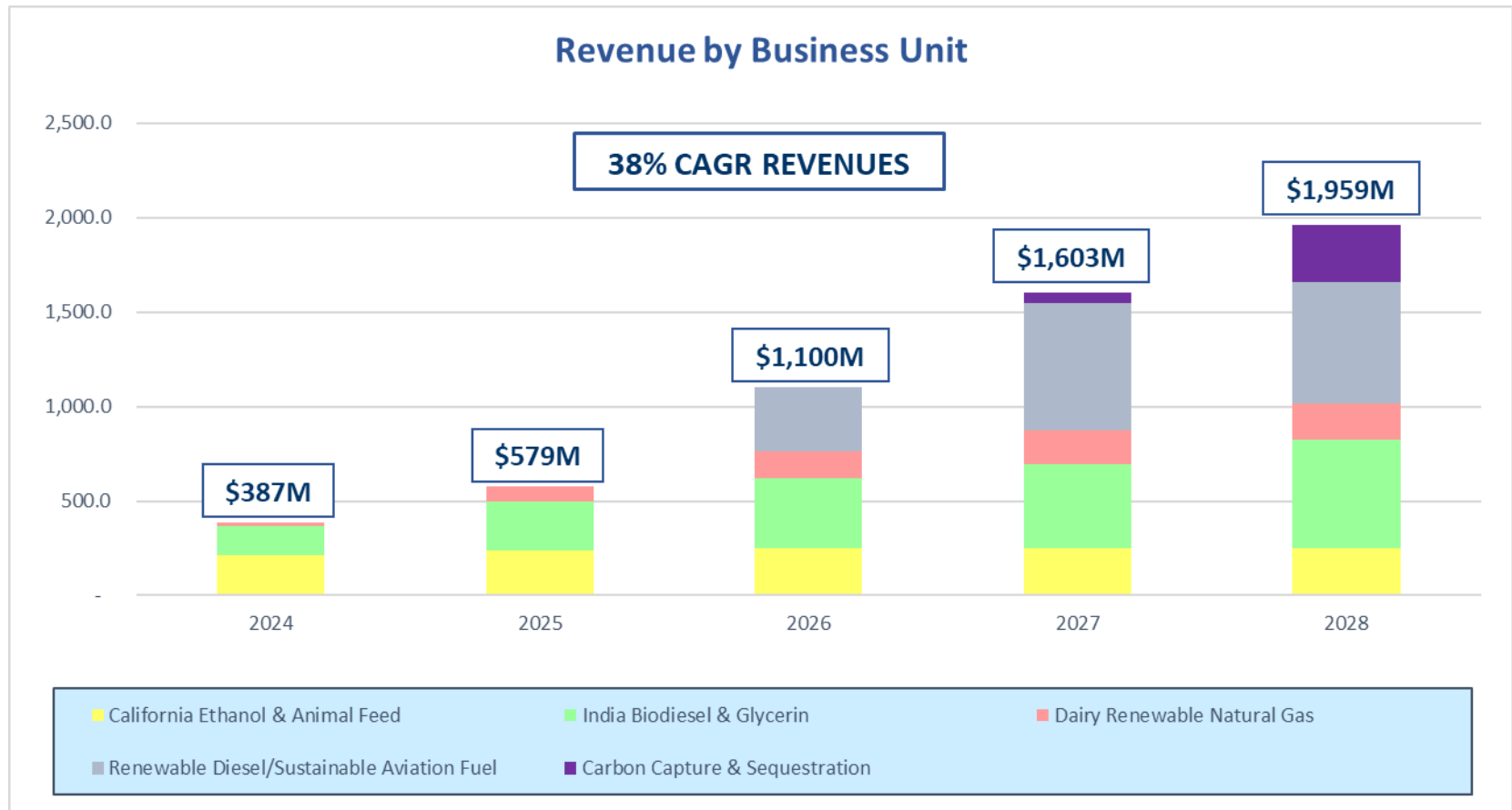


# Aemetis Expansion Plan Projections

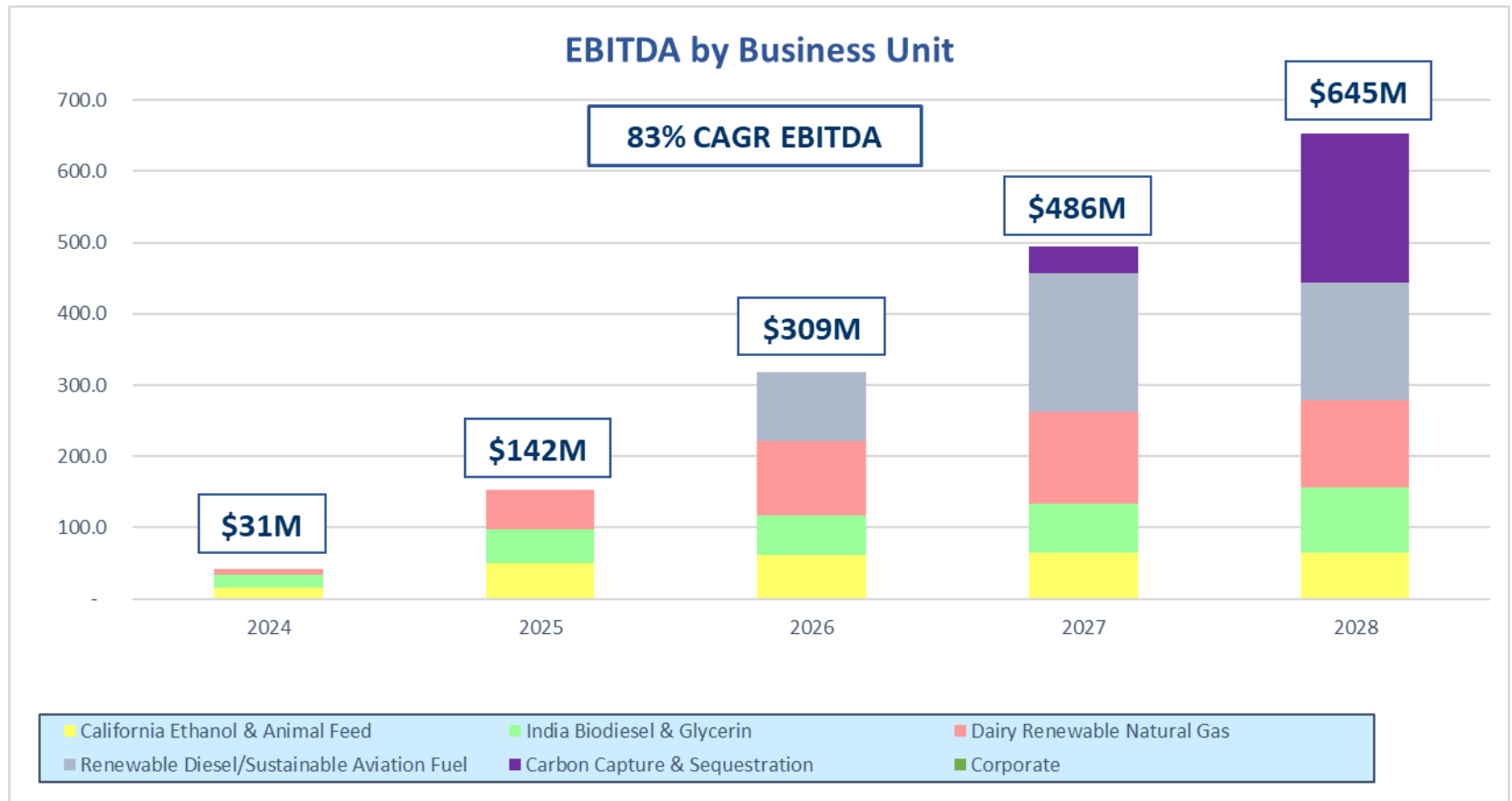
|  | 2024       | 2025       | 2026       | 2027       | 2028        |
|--|------------|------------|------------|------------|-------------|
|  Total Dairy Renewable WCE                    | 28,519     | 63,074     | 80,325     | 104,540    | 127,260     |
|  dRNG Sales Volume (MMBtu/Year)               | 353,186    | 816,866    | 1,035,880  | 1,354,793  | 1,653,868   |
|  India Biodiesel (Gallons/Year)               | 34,227,559 | 54,419,612 | 73,968,405 | 84,535,320 | 109,895,916 |
|  SAF Jet / Renewable Diesel (Gallons/Year)    | -          | -          | 44,484,300 | 88,243,313 | 88,485,075  |
|  Carbon Capture & Sequestration (Metric Tons) | -          | -          | -          | 209,997    | 1,056,663   |



# Aemetis Projected Revenue Growth by Business Unit



# Aemetis Projected EBITDA Growth by Business Unit



# Revenue and Adjusted EBITDA Growth Plan

## Projected Consolidated Revenues and Adjusted EBITDA

| Revenues (millions)                        | 2024            | 2025            | 2026              | 2027              | 2028              |
|--|-----------------|-----------------|-------------------|-------------------|-------------------|
| California Ethanol & Animal Feed           | 212.9           | 238.8           | 248.8             | 249.8             | 251.2             |
| India Biodiesel & Glycerin                 | 155.3           | 259.1           | 369.2             | 442.3             | 575.0             |
| Dairy Renewable Natural Gas                | 18.1            | 81.3            | 144.2             | 181.2             | 190.0             |
| Renewable Diesel/Sustainable Aviation Fuel | -               | -               | 338.1             | 671.9             | 643.1             |
| Carbon Capture & Sequestration             | -               | -               | -                 | 57.6              | 299.6             |
| <b>Total Revenues</b>                      | <b>\$ 386.4</b> | <b>\$ 579.2</b> | <b>\$ 1,100.3</b> | <b>\$ 1,602.8</b> | <b>\$ 1,958.9</b> |

| Adjusted EBITDA (millions)                 | 2024           | 2025            | 2026            | 2027            | 2028            |
|--|----------------|-----------------|-----------------|-----------------|-----------------|
| California Ethanol & Animal Feed           | 15.9           | 50.7            | 62.0            | 64.3            | 65.4            |
| India Biodiesel & Glycerin                 | 18.3           | 46.2            | 55.8            | 68.9            | 90.4            |
| Dairy Renewable Natural Gas                | 7.0            | 55.3            | 104.1           | 129.1           | 122.6           |
| Renewable Diesel/Sustainable Aviation Fuel | (0.7)          | (0.8)           | 96.7            | 194.7           | 165.1           |
| Carbon Capture & Sequestration             | (0.1)          | (0.1)           | (0.1)           | 37.8            | 209.6           |
| Corporate                                  | (9.1)          | (9.2)           | (9.3)           | (8.8)           | (8.5)           |
| <b>Adjusted EBITDA</b>                     | <b>\$ 31.2</b> | <b>\$ 142.1</b> | <b>\$ 309.2</b> | <b>\$ 485.9</b> | <b>\$ 644.6</b> |





## Net Income to EBITDA Reconciliation

### Projected Consolidated Net Income to Adjusted EBITDA Reconciliation

| Net Income (in millions)                   | 2024             | 2025           | 2026            | 2027            | 2028            |
|--|------------------|----------------|-----------------|-----------------|-----------------|
| California Ethanol & Animal Feed           | (18.7)           | 10.6           | 14.2            | 7.0             | 0.4             |
| India Biodiesel & Glycerin                 | 11.8             | 31.3           | 38.6            | 48.6            | 64.9            |
| Dairy Renewable Natural Gas                | (27.7)           | 13.2           | 43.2            | 49.3            | 12.5            |
| Renewable Diesel/Sustainable Aviation Fuel | (1.4)            | (1.5)          | 70.6            | 141.1           | 110.9           |
| Carbon Capture & Sequestration             | (5.0)            | (9.3)          | (14.4)          | 12.3            | 181.1           |
| Corporate                                  | (26.5)           | (28.9)         | (32.2)          | (35.1)          | (24.7)          |
| <b>Total Net Income</b>                    | <b>\$ (67.5)</b> | <b>\$ 15.5</b> | <b>\$ 120.0</b> | <b>\$ 223.2</b> | <b>\$ 345.1</b> |

| Net Income to EBITDA (millions)      | 2024           | 2025            | 2026            | 2027            | 2028            |
|--------------------------------------|----------------|-----------------|-----------------|-----------------|-----------------|
| Net income                           | (67.5)         | 15.5            | 120.0           | 223.2           | 345.1           |
| Depreciation                         | 9.1            | 15.3            | 29.7            | 48.9            | 53.2            |
| Stock compensation                   | 9.7            | 12.2            | 15.0            | 18.1            | 7.7             |
| Interest, amortization and accretion | 89.7           | 112.4           | 151.9           | 199.6           | 229.0           |
| Income taxes                         | (9.7)          | (13.3)          | (7.3)           | (3.9)           | 9.6             |
| <b>Adjusted EBITDA</b>               | <b>\$ 31.2</b> | <b>\$ 142.1</b> | <b>\$ 309.2</b> | <b>\$ 485.9</b> | <b>\$ 644.6</b> |



# Aemetis Projected Capital Expenditures by Business Unit

## Projected Capital Expenditures and IRA Tax Credits

| Capital Expenditures (in millions)         | 2024            | 2025            | 2026            | 2027           | 2028           |
|--|-----------------|-----------------|-----------------|----------------|----------------|
| California Ethanol & Animal Feed           | 16.8            | (0.0)           | -               | -              | -              |
| India Biodiesel & Glycerin                 | 20.0            | -               | -               | -              | -              |
| Dairy Renewable Natural Gas                | 74.4            | 58.4            | 61.2            | 54.1           | 29.3           |
| Renewable Diesel/Sustainable Aviation Fuel | 100.8           | 200.0           | 154.2           | -              | -              |
| Carbon Capture & Sequestration             | 24.8            | 30.1            | 67.5            | 1.1            | -              |
| Corporate                                  | -               | -               | -               | -              | -              |
| <b>Total Capital Expenditures</b>          | <b>\$ 236.8</b> | <b>\$ 288.5</b> | <b>\$ 282.9</b> | <b>\$ 55.3</b> | <b>\$ 29.3</b> |

| IRA Tax Credits (in millions)              | 2024           | 2025           | 2026            | 2027            | 2028           |
|--|----------------|----------------|-----------------|-----------------|----------------|
| California Ethanol & Animal Feed           | 5.0            | 6.0            | 6.4             | 6.4             | 5.0            |
| India Biodiesel & Glycerin                 | -              | -              | -               | -               | -              |
| Dairy Renewable Natural Gas                | 15.1           | 79.1           | 87.0            | 102.7           | 6.3            |
| Renewable Diesel/Sustainable Aviation Fuel | -              | -              | 14.8            | 29.3            | -              |
| Carbon Capture & Sequestration             | -              | -              | -               | 15.2            | 76.3           |
| Corporate                                  | -              | -              | -               | -               | -              |
| <b>Total IRA Tax Credit</b>                | <b>\$ 20.1</b> | <b>\$ 85.1</b> | <b>\$ 108.3</b> | <b>\$ 153.7</b> | <b>\$ 87.6</b> |





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## Aemetis Ethanol

High Octane, Low Emission and Low Carbon  
Renewable Fuel for Transportation



# California Ethanol Plant: Plan for Earnings Growth



## Ethanol Plant Upgrades to Increase Energy Efficiency and Reduce Carbon Intensity

|  |  |
|--|--|
| High Efficiency Heat Exchangers<br>(Completed 2023)              | Zero Carbon Intensity Electricity                                    |
| 3 MW Solar Microgrid with Battery Storage<br>(Completed Q1 2024) | Electrification of plant reduces costs and carbon intensity          |
| Mechanical Vapor Recompression (2025)                            | Reduce Natural Gas Use by 80% through conversion to electric systems |



## Ethanol Plant Upgrades to Increase Operational Performance

|   |
|---|
| Implemented new Distributed Control System (DCS) with AI capability (2023)                            |
| Increase CO2 capture and reuse from fermentation process (2024)                                       |
| Begin to utilize cellulosic sugar from orchard and forest waste wood to replace corn feedstock (2025) |





# California Ethanol Plant: Conversion to Low Carbon Electricity



# Below Zero Carbon Feedstock for Ethanol/SAF/Hydrogen Production

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- Reliable and abundant negative carbon intensity feedstock supply of orchard waste wood in Central California from 1.5 million acres of almond, walnut and other orchards
- Trucks moving waste wood can use negative carbon intensity dairy Renewable Natural Gas from Aemetis Biogas at low cost to trucking operators
- Sugar from waste wood is negative carbon intensity and a very low cost waste feedstock for ethanol and renewable hydrogen production
- Ethanol-to-Jet renewable fuel using sugars from waste wood provides a lower cost pathway for sustainable aviation fuel (SAF) supply to airlines to meet industry SAF blending mandates





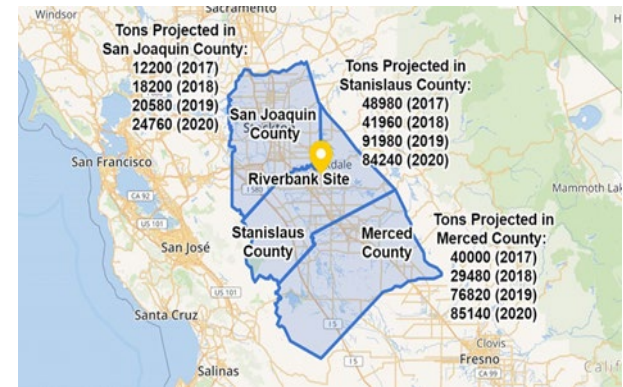
# Millions of Tons of Local Below Zero Carbon Intensity Feedstock

## Biomass-to-Energy Plants Closing in California

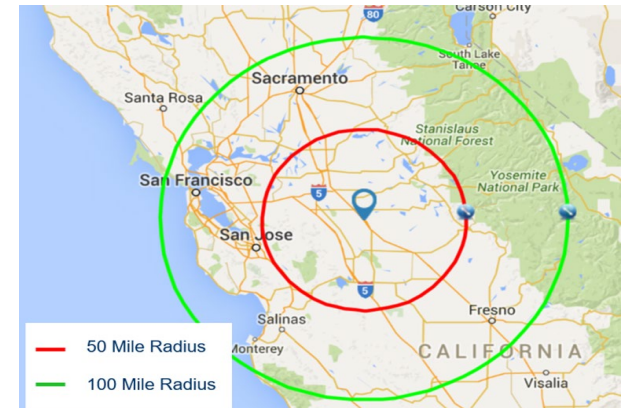
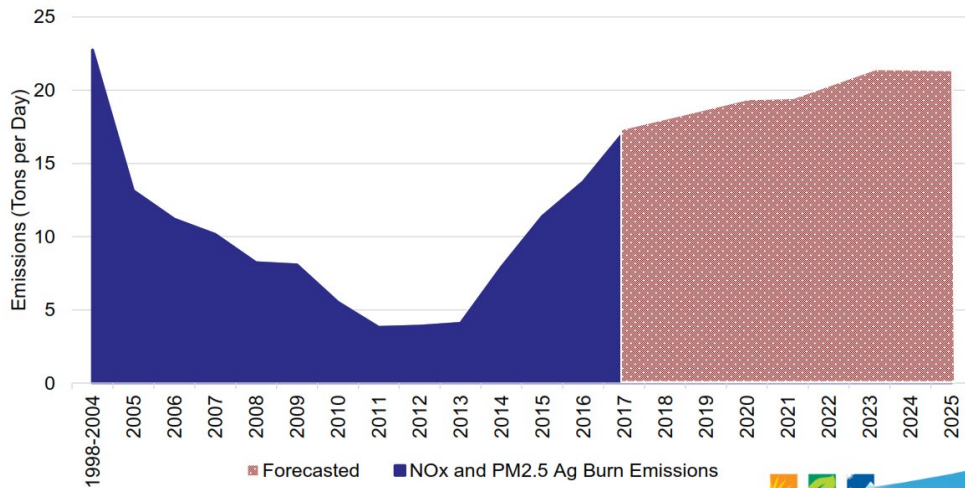
- Biomass-to-Energy plants decreased from 33 plants to 5 plants
- Unable to compete with subsidized solar and wind energy

## More than 1.5 million acres of Almonds/Walnuts in California

- 2+ million tons/year of Ag Waste that is usually burned in the field
- Almond growers pay for removal of wood waste every 18-20 years so orchard can be replaced with new plantings
- **Negative 100 Carbon Intensity orchard waste wood expected**



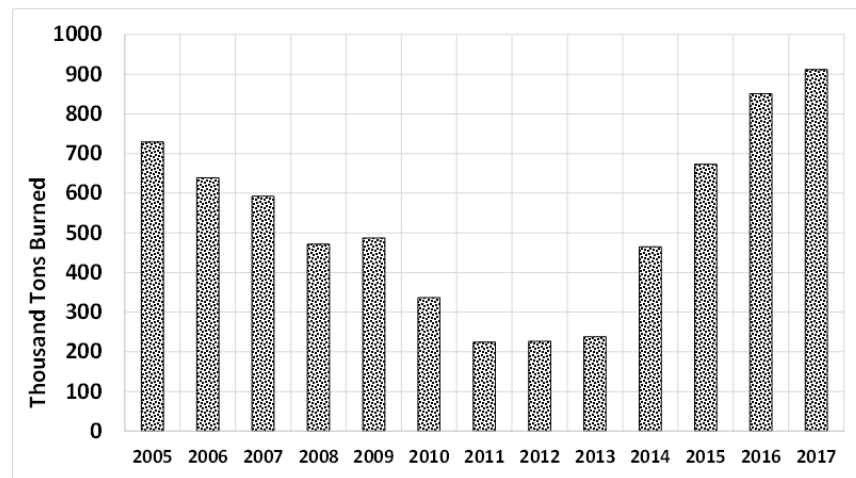
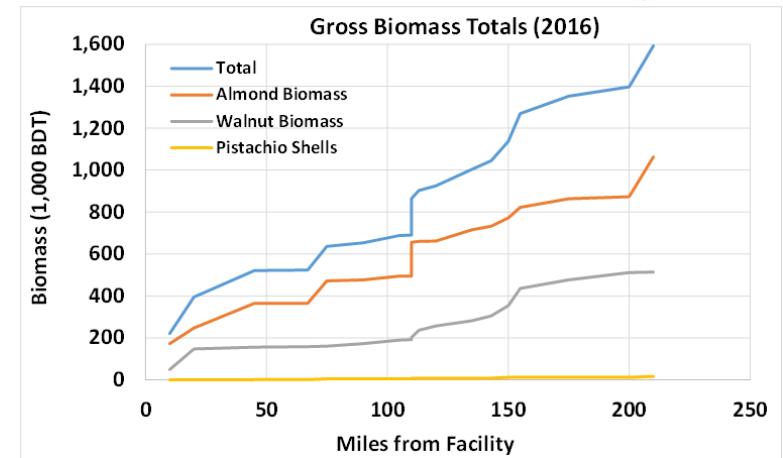
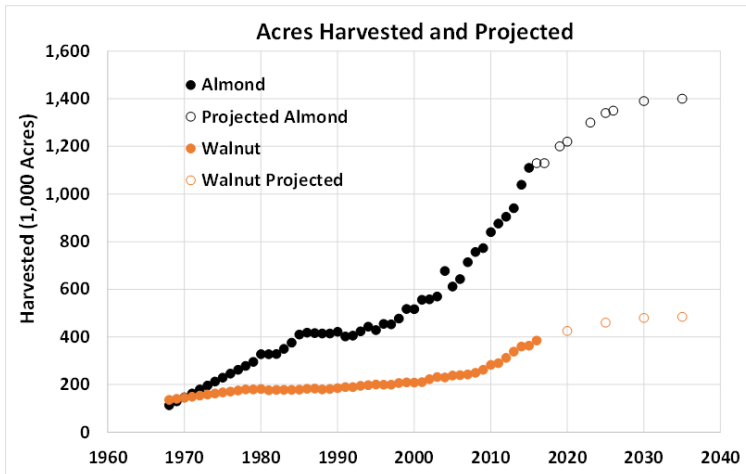
## Field Burning Increasing without Market for Waste Wood



Source: San Joaquin Valley Air Control District Emergency Meeting on Open Burning November 2017



# UC Davis Feedstock Study Results



## Study Conclusions

- Confirmed air emissions assumptions for carbon intensity score under LCFS
- Confirmed biomass growth and availability
- Projected feedstock pricing
- 20-year guaranteed supply due to lifecycle of trees







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## Aemetis Biogas

Below Zero Carbon Intensity Dairy Renewable Natural Gas to  
Fuel Heavy-Duty Trucks and Buses

# Plan for Revenue and Earnings Growth: Below Zero CI Dairy RNG

## Aemetis Dairy RNG Digesters, Pipeline, Gas Cleanup and Utility Interconnection

Biomethane anaerobic digesters at dairies connected by biogas pipeline to a gas cleanup and compression facility at the Aemetis Keyes ethanol plant produce dairy Renewable Natural Gas (RNG) to displace diesel as transportation fuel

### Products and Key Markets

- RNG transported by utility natural gas pipeline
- RNG sales to local trucking customers via onsite station (2024)
- Future: biomethane (CH<sub>4</sub>) converted to renewable hydrogen
- Negative carbon intensity dairy RNG generates:
  - California Low Carbon Fuel Standard credits
  - Federal Renewable Fuel Standard D3 RINs
  - Federal IRA 45Z transferable Production Tax Credits

### Operating Facilities

- Eight digesters and 36 miles of pipeline Completed
- Central biogas-to-RNG facility Completed
- PG&E pipeline interconnect Completed
- 200,000 MMBtu/year RNG Current production rate (Feb. 2024)

### Planned Growth

- Digesters in construction in 2024 supplied by 18 dairies
- Environmental approval received for biogas pipeline extension to aggregate of 60 miles from current 36 miles
- Planned increase to 1,650,000 MMBtu/year RNG production

**Dairy  
Digester  
Planned  
Expansion**



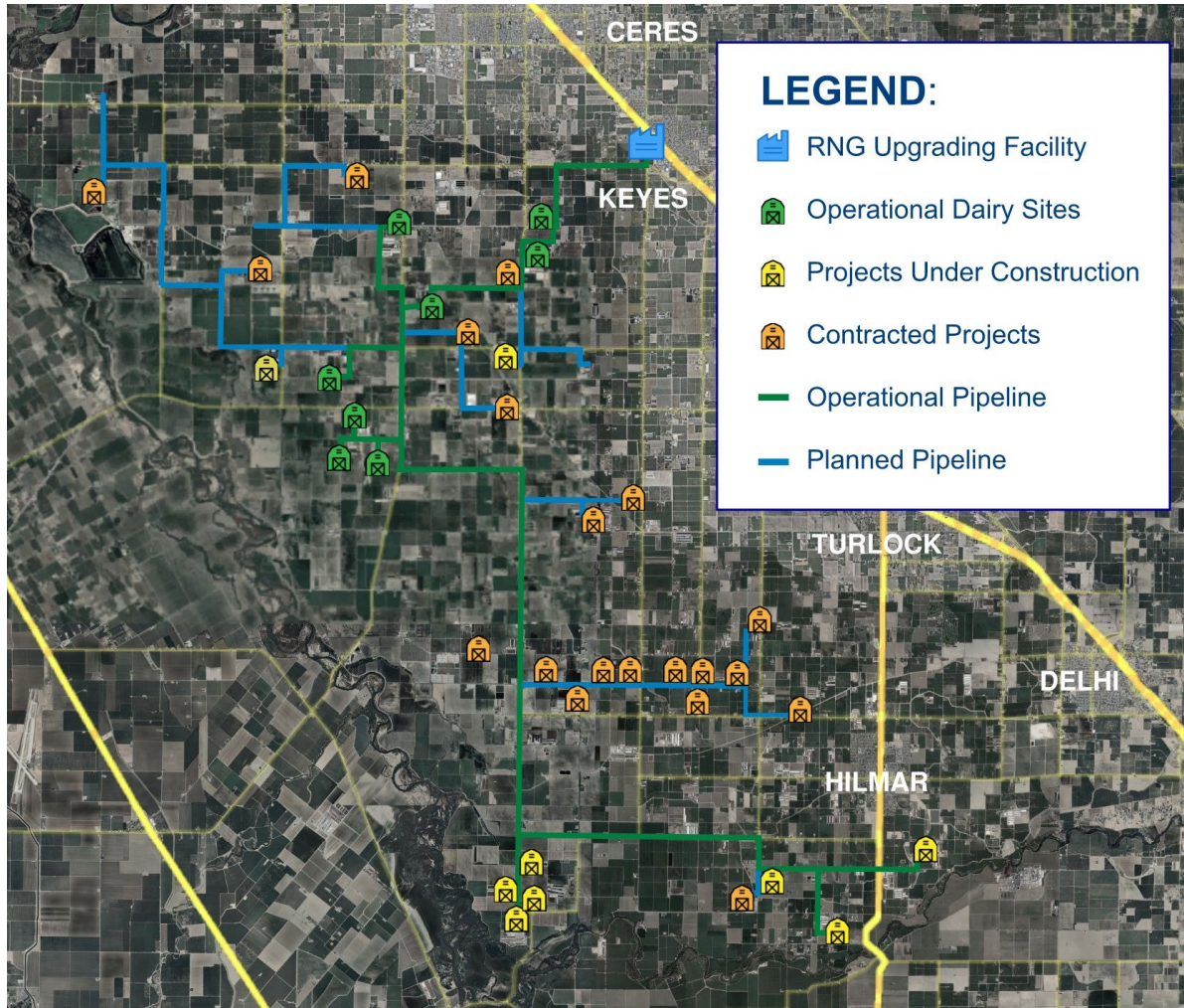
### Dairies

8 -> 2023  
18 -> 2024  
75 -> 2028





# Aemetis Biogas LLC: Dairy RNG Overview



**40 Dairies Signed with 35-Year Leases and/or Participation Agreements**

- Anaerobic digesters capture dairy methane gas; then treatment units at each dairy remove hydrogen sulfide ( $H_2S$ ) before gas enters into biogas pipeline  
**8 Digesters = In Service**
- 36 mile biogas pipeline to ethanol plant for biogas-to-RNG conditioning  
**Biogas Pipeline = In Service**
- Biogas-to-RNG plant produces utility quality gas at Aemetis ethanol plant site, then RNG is odorized and injected into the PG&E utility gas pipeline via onsite interconnection unit  
**RNG Facility = In Service**
- RNG fueling station under construction at Aemetis ethanol plant  
**Fueling In Service Q2 2024**



# Dairy RNG: Plan for Revenue and Earnings Growth

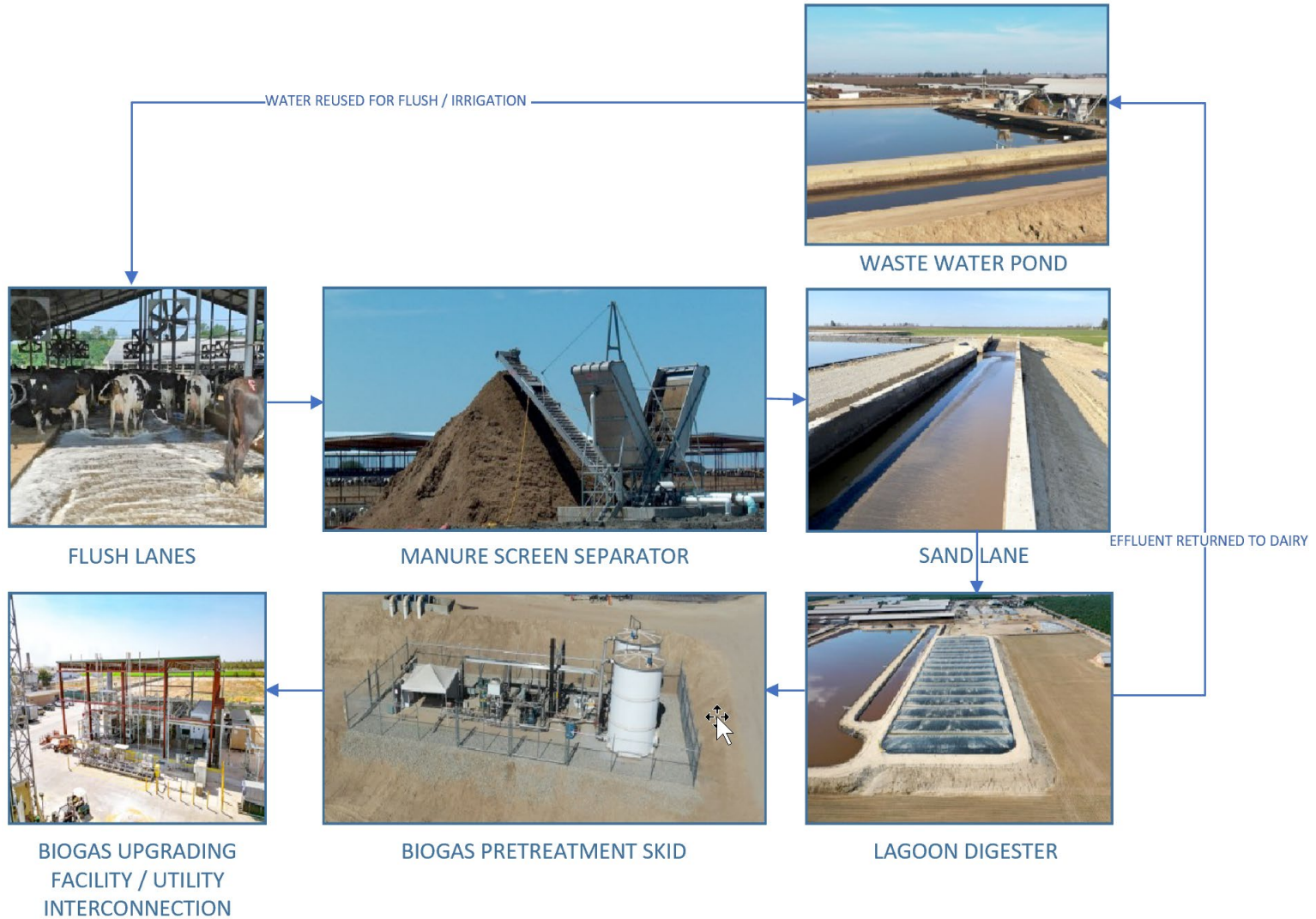
## Aemetis Dairy RNG Project Funding

- Preferred equity for \$30 million (Funded)
- \$23 million California grants for digesters, gas cleanup, and interconnect to utility pipeline
- \$1 million Air District grant for RNG dispensing station at Keyes plant
- \$50 million 20-year debt under USDA Renewable Energy for America Program (REAP) (Funded)
- \$150 million 20-year debt under USDA Renewable Energy for America Program (REAP) (2024 and 2025)





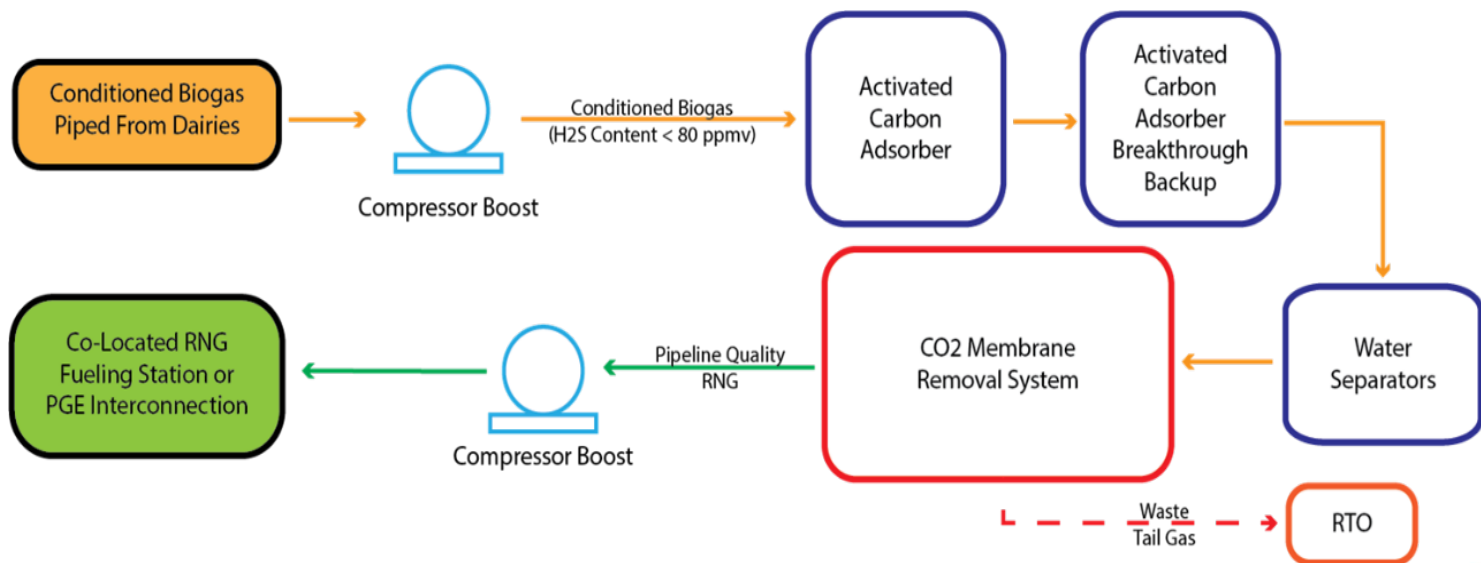
# Dairy Digester Manure-to-Biogas Process



# Biogas-to-RNG Plant Overview

- Aemetis produces biogas (captured methane & CO<sub>2</sub>) from manure feedstock at local dairies
- Central gas conditioning unit converts biogas to Renewable Natural Gas (“RNG”)
- RNG production planned to increase to 1.65 MMBTU/year by 2028
- RNG carbon intensity of -320 to -370 gCO<sub>2</sub>e/MJ
- RNG generates LCFS credits, Renewable Fuel Standard D3 RINs, and Inflation Reduction Act 45Z production tax credits

## Process Flow Diagram





# Aemetis Biogas-to-RNG Plant and PG&E Gas Pipeline Interconnect







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# Aemetis International

India Biodiesel, Refined Glycerin and Refined Tallow Production



# Biodiesel/Glycerin/Tallow Refinery in Kakinada, India



2022 India National Biofuels Policy resulted in Oil Marketing Companies purchasing biodiesel with Cost Plus pricing. Aemetis expanded plant capacity in 2023 and plans continued expansion to 100 mgy.







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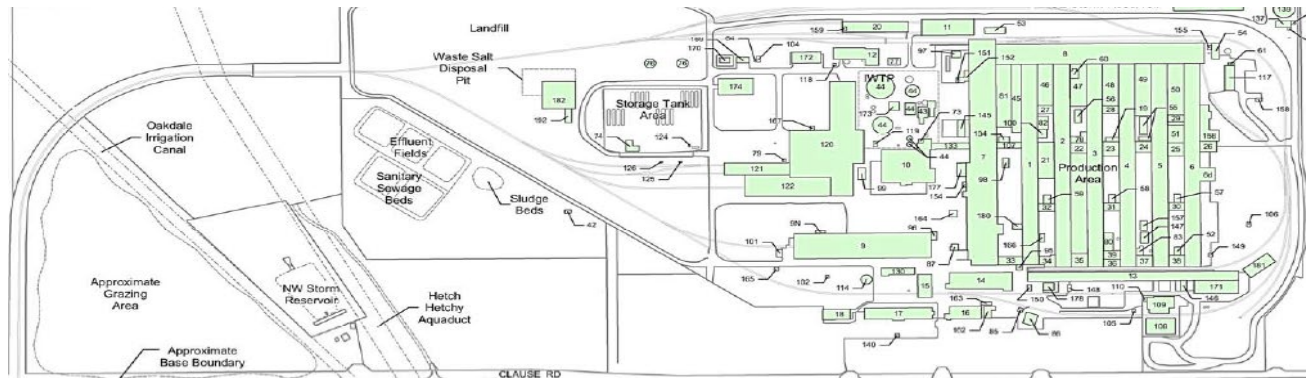
# Aemetis “Carbon Zero” Renewable Fuels

Sustainable Aviation Fuel and Renewable Diesel Production

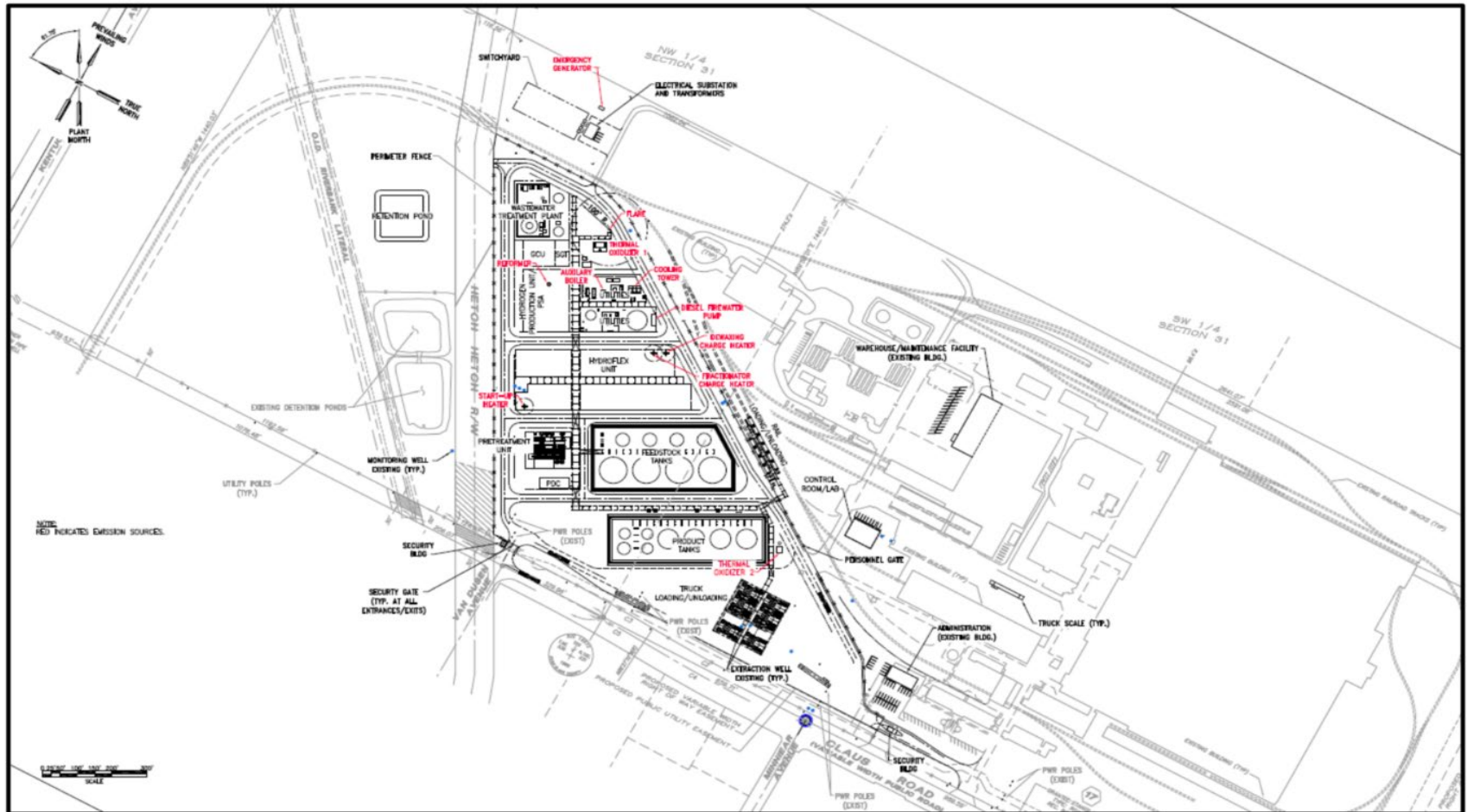


# Riverbank, California Site

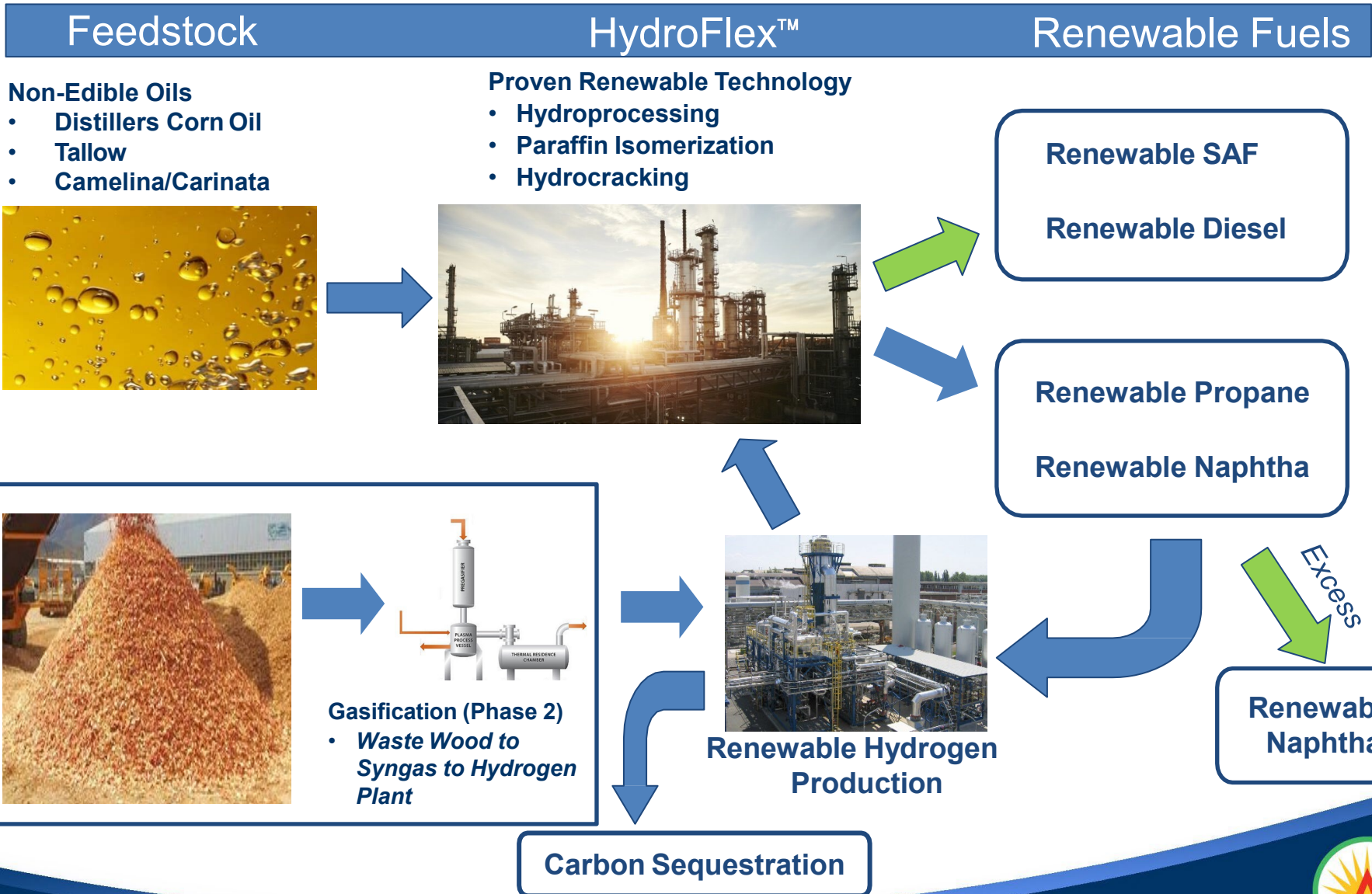
- Signed acquisition agreement for the 125-acre Riverbank Industrial Complex site in December 2021
- Former U.S. Army Ammunition Plant
  - 125 acres of industrial and commercial land
  - 710,000 s.f. of existing buildings
  - Onsite railroad with 120 railcar storage
  - 100% low carbon hydroelectric power with onsite 20-megawatt substation
- Environmental Impact Report (EIR) completed
- City Use Permit and California Environmental Quality Act (CEQA) approval in Sept 2023
- Air Permit public notice issued in February 2024



# Sustainable Aviation Fuel and RD Plant - Riverbank, California



# Technologies for “Carbon Zero” SAF/RD Plants







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# Aemetis Carbon Capture

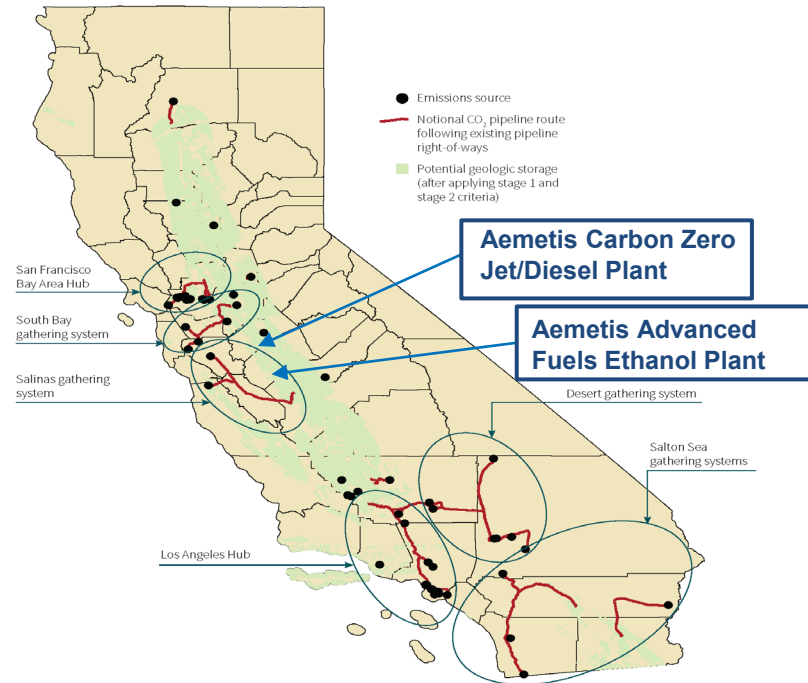
Carbon Capture and Underground Sequestration (CCUS) of CO<sub>2</sub>



# Aemetis Carbon Capture and Sequestration Projects in California

- Formerly an inland ocean now known as the Central Valley of California
  - Light green area shows shale geological storage containing saline water for CCS
  - Shale caprock layer at approximately 7,000 ft depth and basement layer below CO<sub>2</sub> storage formation
- Aemetis plans to sequester a combined two million metric tons of CO<sub>2</sub> per year at two sites located near our biofuels plants
  - 400,000 MT of CO<sub>2</sub> per year from biogas and biofuels plant operations
  - 1.6 million MT of CO<sub>2</sub> per year of carbon sequestration using CO<sub>2</sub> supplied by renewable fuel plants and oil refineries
- \$570 million annual revenues at \$200/MT LCFS credit + \$85/MT federal 45Q tax credit
- Trucking using Aemetis RNG benefits the carbon intensity of the CO<sub>2</sub> and significantly reduces transport costs, while avoiding the need for a CO<sub>2</sub> pipeline

FIGURE 3-12  
CCS PROJECT DEVELOPMENT OPPORTUNITIES



Map illustrates potential project development opportunities that together abate 59 MtCO<sub>2</sub>/yr. Pipeline routings are 'notional' and follow existing pipeline right-of-ways. Sink locations are not intended to be exact locations for geologic storage. Source: Energy Futures Initiative and Stanford University, 2020.

1. The information on this slide constitutes forward-looking statements. All Revenues, Net Income, and Adjusted EBITDA projections are subject to change and based upon current expectations.



# Access to Permanent Geological Storage

## Permanent Geologic Storage

The US has ample physical capacity to permanently store thousands of years of US emissions at current levels in secure geologic saline formations.<sup>25</sup> However, local characterization will be needed to identify suitable CO<sub>2</sub> injection sites for project development. Site access and cost of injection also factor into geologic storage access for a given project.

Locating direct air capture and carbon capture hubs in areas with existing saline storage capacity can minimize transport costs, land use, and local impact. However, not all potential direct air capture and carbon capture hubs are co-located with geologic storage formations. Shared transport infrastructure can achieve beneficial economies of scale, enabling break-even on investments in industrial capture retrofit even when longer distance transport to a final storage site is required.

### Estimated US geologic CO<sub>2</sub> storage capacity

|        | Low          | Med          | High          |
|--------|--------------|--------------|---------------|
| Saline | 2.2 trillion | 8.1 trillion | 21.2 trillion |
| Fossil | 72 billion   | 159 billion  | 188 billion   |

metric tons CO<sub>2</sub>

Source: NATCARB (NATCARB\_OilGas\_v1502; October 30, 2015; NATCARB\_Saline\_v1502; October 30, 2015).

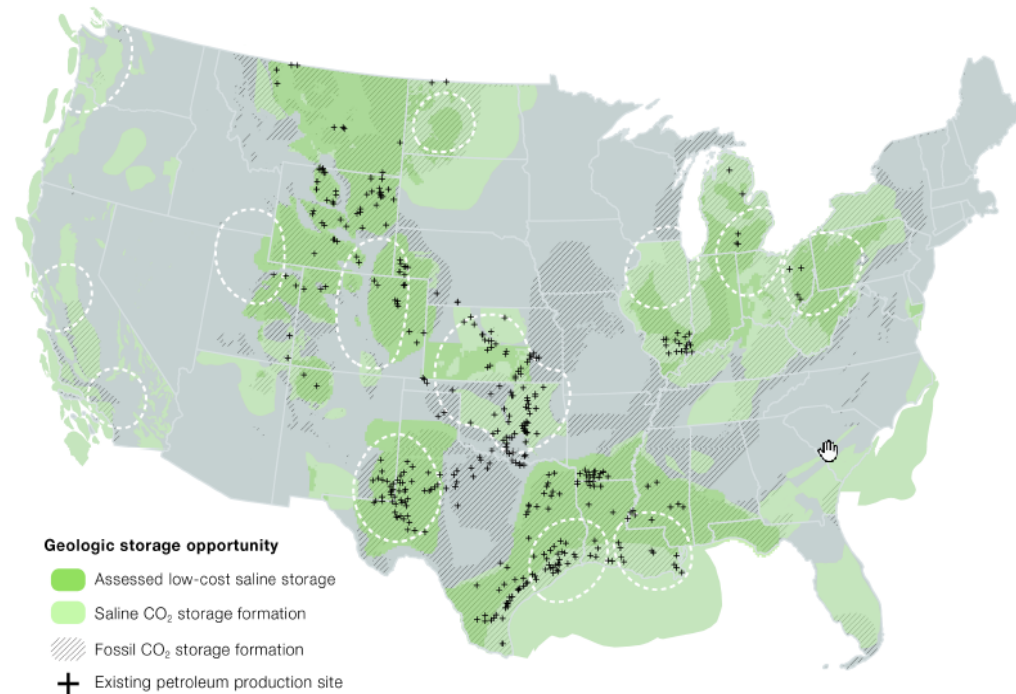


Figure authored by GPI based on ARI (September 2018), Middleton et al. (September 2020), NATCARB (NATCARB\_Saline\_v1502; October 30, 2015), HIFLD (September 21, 2017).



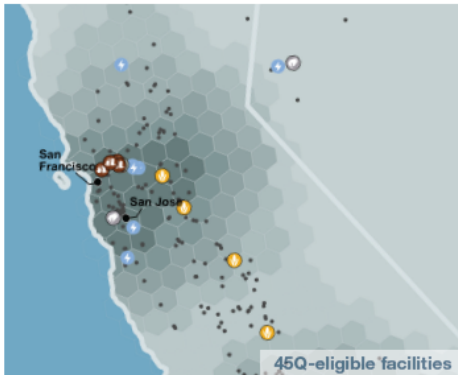
# Saline Storage Formations

## Northern California

Carbon capture and storage is an essential tool for achieving midcentury climate goals, maintaining the competitiveness of US industry, and protecting and creating high-wage jobs. Carbon capture is crucial in decarbonizing key carbon-intensive industries where CO<sub>2</sub> emissions are inherent to the chemistry of production processes and cannot be eliminated solely by switching to low-carbon electricity. The US has capacity to safely and permanently store thousands of years of carbon emissions in geologic saline formations.

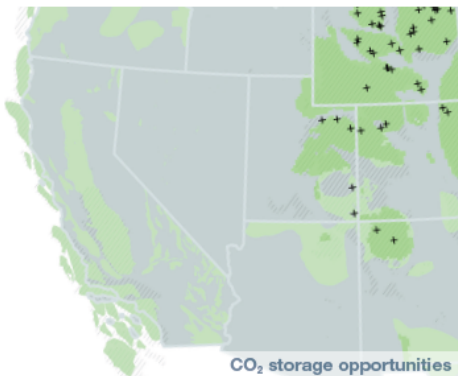
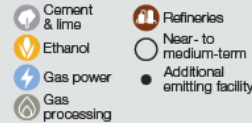


### Carbon Capture and Storage



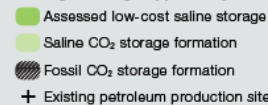
The Section 45Q tax credit lowers cost barriers to carbon capture and storage. Among the 17 industrial and power facilities in the Northern California hub that meet emissions thresholds for Section 45Q eligibility, ten have been identified as near- to medium-term candidates for capture retrofit over the next 10 to 15 years.

#### 45Q-eligible facilities by industry

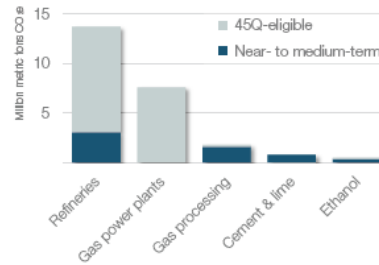


Northern California has potential to act as a carbon storage destination for capture facilities and carbon removal. The state of California has potential to store 148 billion metric tons of CO<sub>2</sub> in secure geologic saline formations, and also has extensive capacity for carbon storage in geologic fossil basins.

#### Geologic storage opportunity

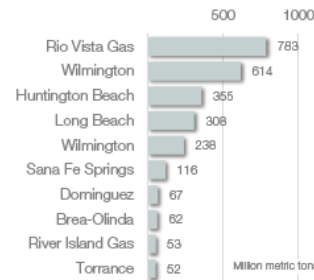


### Carbon capture opportunities

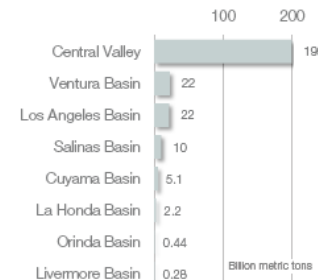


- Industrial and power facilities emit **29.6 Mt CO<sub>2</sub>e per year**
- 45Q-eligible facilities emit **24.5 Mt CO<sub>2</sub>e per year**
- 5.8 Mt CO<sub>2</sub> per year are capturable in the near- to medium-term

### Fossil storage formations by CO<sub>2</sub> storage capacity



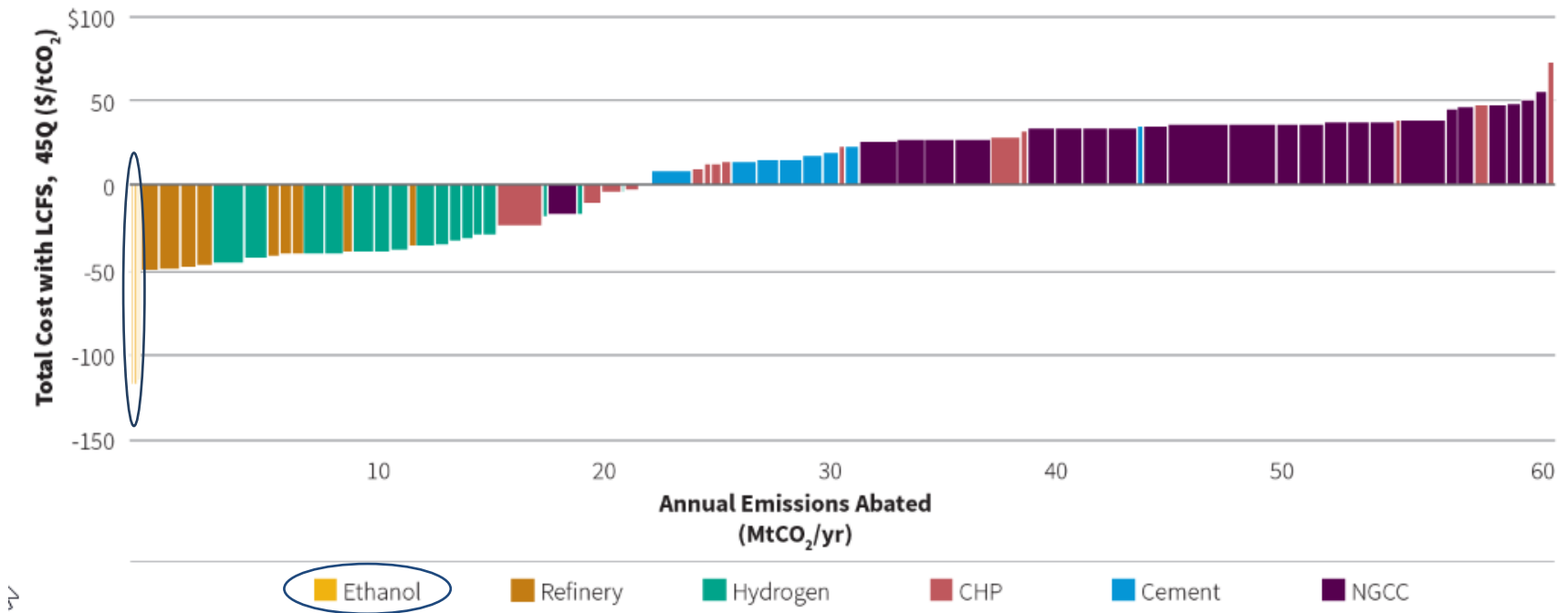
### Saline storage formations by CO<sub>2</sub> storage capacity



# Ethanol Plants are Largest Reduction in Costs = Highest Value CCS Projects

FIGURE 3-14

## MARGINAL ABATEMENT CURVE BY FACILITY



The 34 facilities on the left side of the graph that show negative costs can generate positive revenues. The opposite is true for the 42 facilities on the right side of the graph. Note that the crossover on this graph from negative to positive costs occurs at 21.5 MtCO<sub>2</sub>/yr abated.

Source: Energy Futures Initiative and Stanford University, 2020.

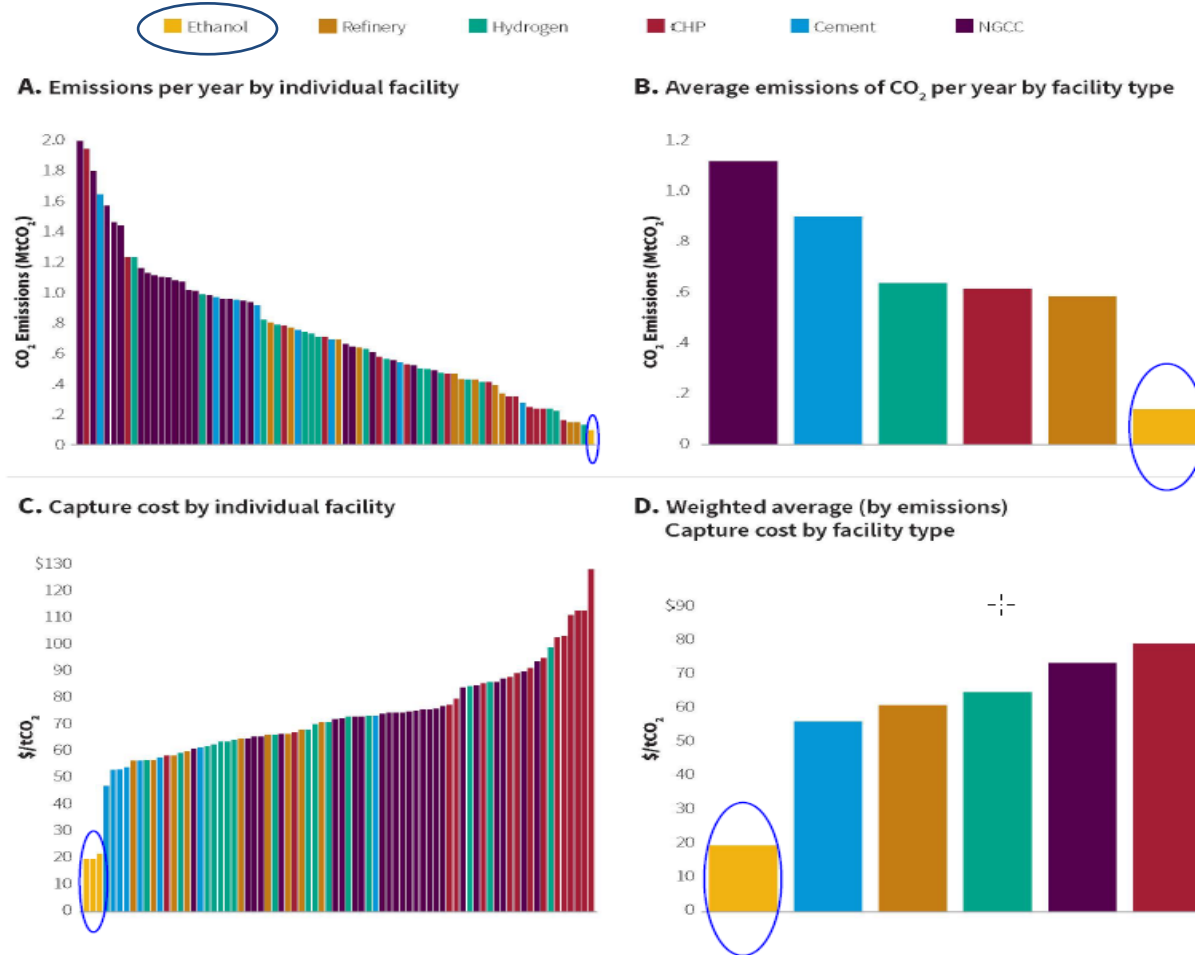
k Abatement cost = capture cost (\$/tCO<sub>2</sub>) + storage cost (\$/tCO<sub>2</sub>) plus incentives (LCFS and 45Q credits where applicable, in \$/tCO<sub>2</sub>)





# Emission Comparison and Capture Cost

**FIGURE 3-13**  
**COMPARISON OF EMISSIONS AND CAPTURE COST (BY FACILITY AND SUBSECTOR)**



- Decreased capture cost with pre-existing on-site CO<sub>2</sub> compression system
- Inverse relationship between plant emissions and storage capability
- Highest emitters lack the geological positioning
- Aemetis has ability to receive CO<sub>2</sub> by rail and inject into well

Emissions volumes and capture costs for the 76 candidate facilities analyzed in this study. Source: Energy Futures Initiative and Stanford University, 2020.



# Proximity to Other CO<sub>2</sub> Sources

- Aemetis CO<sub>2</sub> storage sites are located 90 miles directly east of 5 major oil refineries in the San Francisco Bay Area
- Each SF Bay Area refinery emits approximately 800,000 to 2,000,000 MT of CO<sub>2</sub> per year
- Total of ~ 5,000,000 MT of CO<sub>2</sub> capture and storage needed for Bay Area oil refineries

Source of industrial emissions by sector

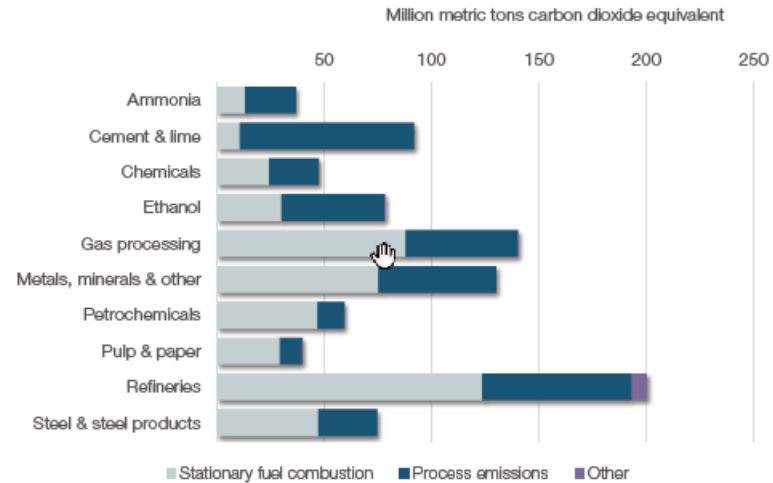
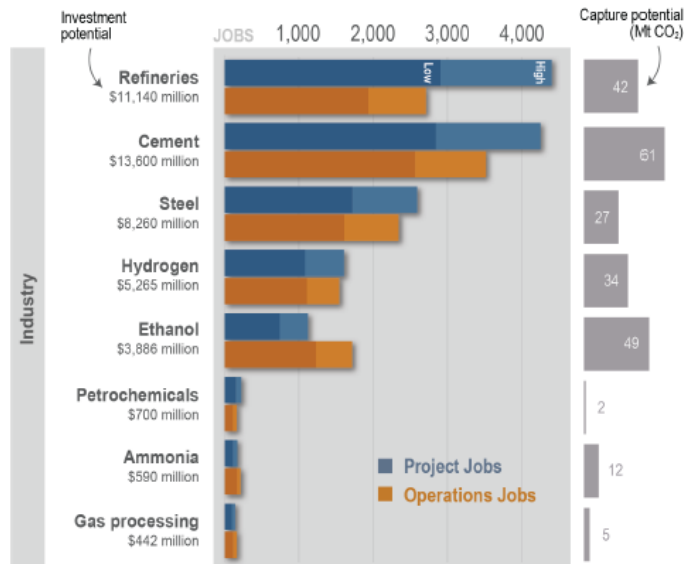


Figure authored by GPI based on EPA GHGRP 2019 data (as of August 7, 2021).

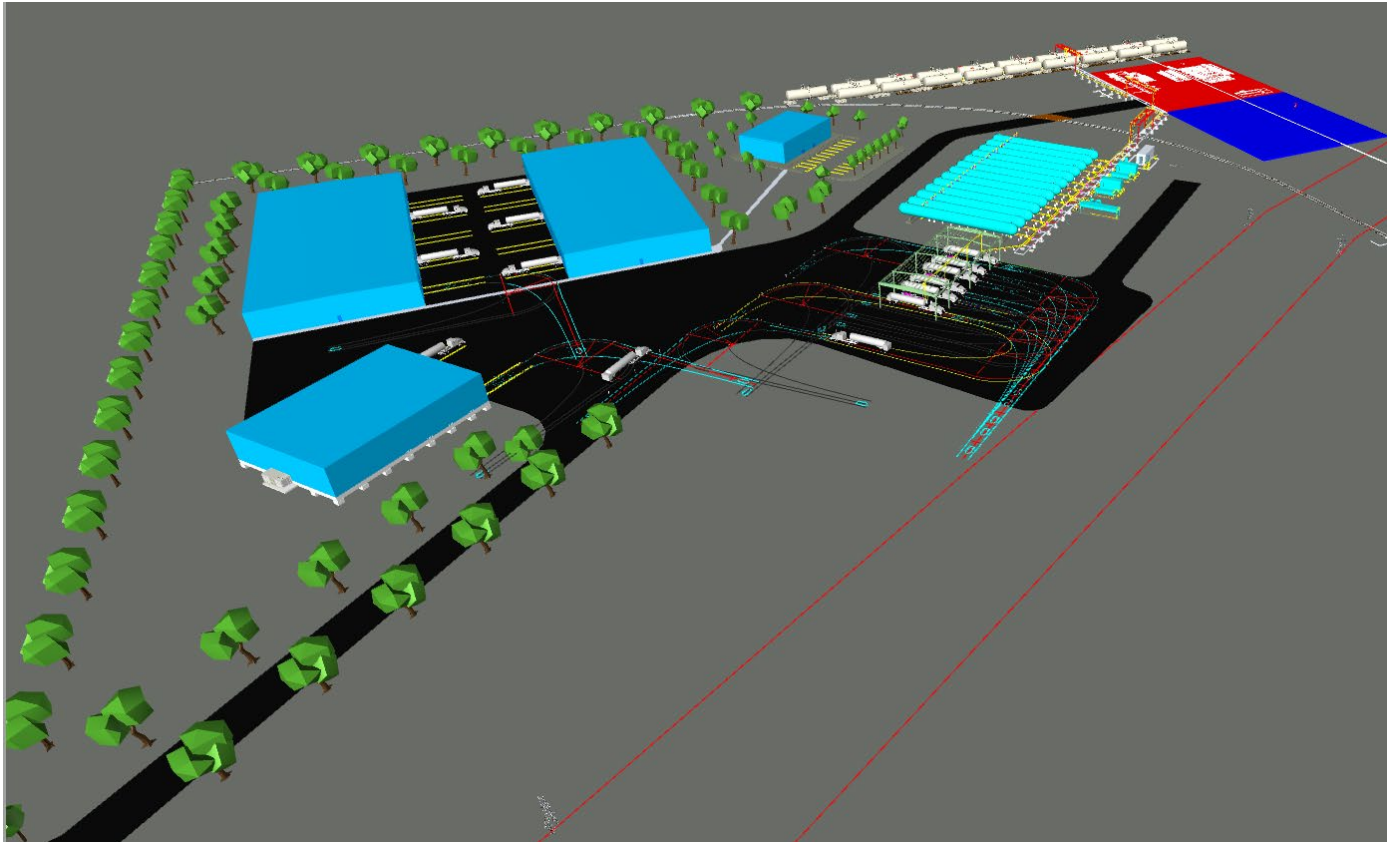
Near- and medium-term carbon capture jobs potential, 2021-2035



Images provide by GPI based on Source: King, Herndon, Larsen, and Hiltbrand, The Economic Benefits of Carbon Capture



# Aemetis CCUS CO<sub>2</sub> Unloading, Compression and Sequestration Site



- Gaseous CO<sub>2</sub> from SAF/RD plant and ethanol plant, as well as dairy RNG facility
- Liquid CO<sub>2</sub> transported to site using RNG trucks allows delivery of CO<sub>2</sub> sourced from other producers
- Rail and truck CO<sub>2</sub> loading and unloading facilities
- CO<sub>2</sub> injection and monitoring wells
- Control room onsite





# Aemetis Carbon Capture & Sequestration Project Leaders

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## **Baker Hughes: Underground Engineering and Well Drilling**

- Leading natural gas and crude oil drilling company
- \$20 billion market value
- Operates in 120+ countries
- CCUS Technology Solutions include:
  - Pre-FEED and FEED consultation and project design
  - Capture and purification
  - Injection Well design and construction for storage
  - Micro-seismic expertise



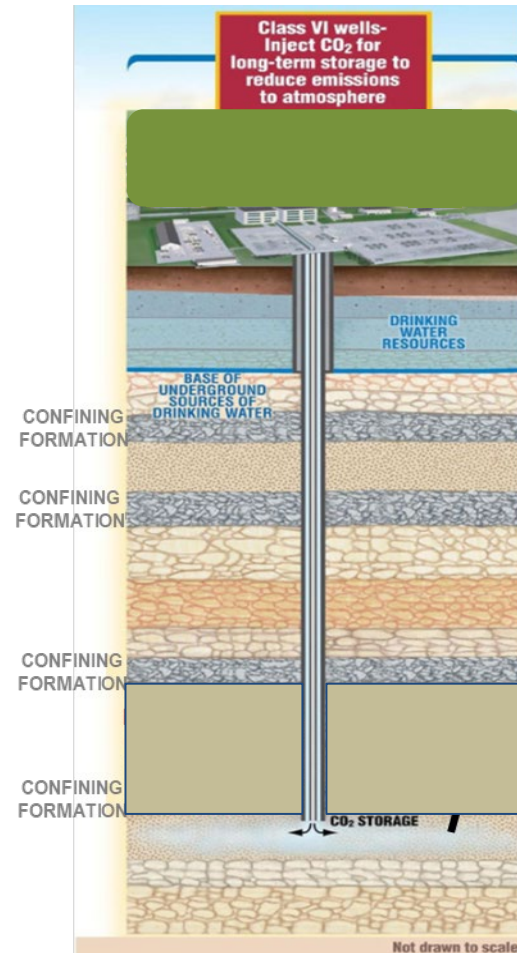
## **ATSI: Carbon Sequestration Project Manager, Engineering and EPC**

- For more than 40 years, ATSI has provided world-class Front-End Engineering Design (FEED/FEL), project management, EPC and commissioning services
- Major projects completed at more than 60 oil refineries, including commissioning of \$10 billion oil refinery
- Completed 138 commercial projects in 21 different states



# Riverbank CCS Project Milestones and Expected Timeline:

- Characterization Well Permit
  - Access road and well pad (**Complete**)
  - CalGEM permit (for characterization well) received in Q2 2023 (**Complete**)
  - All City of Riverbank permits for CO<sub>2</sub> injection characterization well (**Complete**)
- Data Collection from Characterization Well
  - Drill 21-30 days to collect core samples, caprock fracture testing, porosity/permeability, horizontal scanning (2024)
  - Sample core analysis takes 60 days (2024)
  - Final reservoir engineering and aboveground engineering
- Submit EPA Class VI permit (2024)
- Receive EPA Class VI permit (2025 or 2026)
- Drill Riverbank CO<sub>2</sub> injection well (2026)







AEMETIS

Aemetis, Inc. (NASDAQ: AMTX)