

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
2018 Dairy Digester Research and Development Program  
Applications Submitted to CDFA

\* The 2018 DDRDP application information was extracted from the online application system as submitted by the applicants, therefore, CDFA cannot guarantee accuracy of the information.

\*\* Total emission reduction is estimated by the applicant and has not been verified.

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e )	Requested Grant Funds	Matching Funds
Decade Centralized Dairy Digester Pipeline Project	The Decade Centralized Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure from two dairies in Tulare County, California. The project is 100% farmer owned by the host dairymen Eric and Clarinda Westra & Richard and Donna Westra. The project is a part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near River Ranch. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	192,558	\$ 1,773,587	\$ 1,773,587
Grimmius Hanford Biogas	Grimmius Cattle Co., a dairy operation located in Hanford, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kings	372,623	\$ 1,565,016	\$ 1,579,990
Maddox Dairy Biogas	Maddox Dairy, a dairy operation located in Riverdale, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pretreatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A 1 MW generator will be installed. A project specific emissions mitigation plan is implemented as part of the project. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and Martin Energy comprise the project team.	Fresno	175,693	\$ 1,493,391	\$ 3,354,072
Riverbend Dairy Biogas	Riverbend Dairy, a dairy operation located in Tulare, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	245,930	\$ 2,090,404	\$ 2,731,980
Valadao Dairy Biogas	Valadao Dairy, a dairy operation located in Hanford, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kings	121,005	\$ 1,028,545	\$ 1,877,850
Rocking Horse Dairy Biogas	Rocking Horse Dairy, a dairy operation located in Hanford, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kings	119,540	\$ 1,016,091	\$ 2,681,539
Western Sky Dairy Biogas	Western Sky Dairy, a dairy operation located in Bakersfield, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kern	352,595	\$ 2,820,762	\$ 2,902,189
Double J Dairy Biogas	Double J Dairy, a dairy operation located in Visalia, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	285,496	\$ 2,426,716	\$ 4,289,805
Milky Way Dairy Biogas	Milky Way Dairy, a dairy operation located in Visalia, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	347,462	\$ 2,953,427	\$ 4,244,734
Mineral King Dairy Biogas	Mineral King Dairy, a dairy operation located in Visalia, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	194,751	\$ 1,655,384	\$ 3,416,032

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
2018 Dairy Digester Research and Development Program  
Applications Submitted to CDFA

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e)	Requested Grant Funds	Matching Funds
Rancho Sierra Vista Dairy Biogas	Rancho Sierra Vista Dairy, a dairy operation located in Visalia, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	172,958	\$ 1,470,143	\$ 3,474,018
Rob Van Grouw Dairy Biogas	Rob Van Grouw Dairy, a dairy operation located in Visalia, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	140,442	\$ 1,193,757	\$ 3,751,897
Mellema Dairy Biogas	Mellema Dairy, a dairy operation located in Visalia, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	152,057	\$ 1,292,485	\$ 3,921,216
Jacobus De Groot #2 Dairy Biogas	Jacobus De Groot #2 Dairy, a dairy operation located in CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	61,616	\$ 523,736	\$ 2,857,688
Aukeman Dairy Biogas	Aukeman Farms Dairy, a dairy operation located in Tulare CA proposes to build a Tier 1 designed manure only covered lagoon digester with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor and meter station will deliver biogas via a biogas gathering line to the centralized "Tipton Dairy Biogas Cluster" shared upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the biomethane pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team	Tulare	207,701	\$ 1,765,457	\$ 3,233,051
Dykstra Dairy Biogas	Dykstra Dairy, a dairy operation located in Tulare, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor and meter station will deliver biogas via a biogas gathering line to the centralized "Tipton Dairy Cluster" shared upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the biomethane pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	265,936	\$ 2,260,454	\$ 3,436,003
Elk Creek Dairy Biogas	Elk Creek Dairy, a dairy operation located in Tulare, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	67,406	\$ 572,947	\$ 2,697,734
El Monte Dairy Biogas	The El Monte Dairy, a dairy operation located in Tipton, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	118,903	\$ 1,010,674	\$ 3,122,303
Horizon Jersey Dairy Biogas	Horizon Jersey Dairy, a dairy operation located in Tipton, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	335,398	\$ 2,850,886	\$ 4,134,949
Scheenstra Dairy Biogas	Scheenstra Dairy, a dairy operation located in Tulare, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	220,360	\$ 1,873,064	\$ 3,596,847

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
2018 Dairy Digester Research and Development Program  
Applications Submitted to CDFA

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e)	Requested Grant Funds	Matching Funds
De Groot North Dairy Biogas	North Dairy, LP, a dairy operation located in Hanford, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kings	169,699	\$ 1,442,440	\$ 2,401,778
De Groot South Dairy Biogas	South Dairy, LP, a dairy operation located in Hanford, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kings	181,494	\$ 1,542,697	\$ 1,758,946
Double Diamond Dairy Biogas	Double Diamond Dairy, a dairy operation located in El Nido, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pretreatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A 2MW generator will be installed. A project specific emissions mitigation plan is implemented as part of the project. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and Martin Energy comprise the project team.	Merced	236,605	\$ 2,247,744	\$ 6,018,974
Bar 20 Dairy Biogas	Bar 20 Dairy, a General Order dairy in Kerman, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. California Bioenergy, 4Creeks Engineering, 4C Global and Martin Energy comprise the project team. A 2MW generator has been permitted with advanced heat recovery powering an absorption chiller system for cooling milk and a hot water generator to replace the propane boiler. An emissions mitigation plan is implemented as part of the project.	Fresno	247,069	\$ 2,100,087	\$ 5,900,513
Belonave Dairy Biogas LLC	Belonave, a dairy operation located in Bakersfield, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kern	225,659	\$ 1,918,099	\$ 3,540,063
Meadowlake Dairy Digester Pipeline Project	Meadowlake Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. The Calgren Dairy Fuels Cluster has already laid four miles of pipeline and begun construction of three digesters awarded CDFA funds in late 2017--scheduled to provide the state's first pipeline dairy biogas fuel by June of 2018. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	258,134	\$ 2,191,655	\$ 2,191,655
Cornerstone Dairy Digester Pipeline Project	Cornerstone Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. The Calgren Dairy Fuels Cluster has already laid four miles of pipeline and begun construction of three digesters awarded CDFA funds in late 2017--scheduled to provide the state's first pipeline dairy biogas fuel by June of 2018. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	185,238	\$ 1,266,053	\$ 1,266,054
Little Rock Centralized Dairy Digester Pipeline Project	Little Rock Dairy Centralized Digester Pipeline Project is a new covered lagoon digester processing dairy manure from two smaller dairies in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. The Calgren Dairy Fuels Cluster has already laid four miles of pipeline and begun construction of three digesters awarded CDFA funds in late 2017--scheduled to provide the state's first pipeline dairy biogas fuel by June of 2018. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	146,839	\$ 2,096,578	\$ 2,096,578
Double Diamond Dairy Digester Project	Aligned Digester Cooperative has partnered with Double Diamond Dairy & Ranch to develop an anaerobic digester that will produce up to 109,995 MMbtu of renewable natural gas (RNG) to expand the market for near-zero emission natural gas vehicles in the San Joaquin Valley. Aligned Digesters will construct a new 23 million gallon anaerobic lagoon to treat the manure and flushwater that is produced by the dairy which is today stored and periodically land applied. The resulting gas, which is more than 50% methane, will be further cleaned to remove most of the carbon dioxide, water and other impurities to produce biomethane for the transportation market. The processed gas will then be compressed and sold to compressed natural gas fueling stations to be used as RNG for local use. The Aligned Digester team is a collaboration of local developers specializing in dairy biogas that have joined forces to leverage the success of the Verwey digesters and expand the renewables market in the region.	Merced	262,639	\$ 3,000,000	\$ 4,373,705
Diamond D Dairy Digester Project	Aligned Digester Co., LLC (dba Aligned Digester Cooperative LLC) has partnered with Diamond D Dairy to develop an anaerobic digester that will produce up to 67,567 MMbtu of renewable natural gas (RNG) to expand the market for near-zero emission natural gas vehicles in the San Joaquin Valley. Aligned Digesters will construct a new 14 million gallon anaerobic lagoon to treat the manure and flushwater that is produced by the dairy which is today stored and periodically land applied. The resulting gas, which is approximately 60% methane, will be further cleaned to remove most of the carbon dioxide, water and other impurities to produce biomethane for the NGV market. The RNG will be compressed and sold to compressed natural gas fueling stations for local use. The Aligned Digester team is a collaboration of local developers specializing in dairy biogas that have joined forces to leverage the success of the Verwey digesters and expand the renewables market in the region.	Kings	185,213	\$ 3,000,000	\$ 3,606,207

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
2018 Dairy Digester Research and Development Program  
Applications Submitted to CDFA

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e)	Requested Grant Funds	Matching Funds
Costa View Madera Dairy Digester Project	Aligned Digester Co., LLC (dba Aligned Digester Cooperative LLC) has partnered with Costa View Farms to develop an anaerobic digester that will produce up to 114,562 MMBtu of renewable natural gas (RNG) to expand the market for near-zero emission natural gas vehicles in the San Joaquin Valley. Aligned Digesters will construct a new 23 million gallon anaerobic lagoon to treat the manure and flushwater that is produced by the dairy which is today stored and periodically land applied. The resulting gas, which is approximately 60% methane, will be further cleaned to remove most of the carbon dioxide, water and other impurities to produce biomethane for the NGV market. The RNG will be compressed and sold to compressed natural gas fueling stations for local use. The Aligned Digester team is a collaboration of local developers specializing in dairy biogas that have joined forces to leverage the success of the Verwey digesters and expand the renewables market in the region.	Madera	298,164	\$ 3,000,000	\$ 4,230,084
RuAnn Dairy Anaerobic Digester - Biogas to Electricity	RuAnn Dairy is expanding its dairy operations. As part of the expansion, RuAnn Dairy is looking to build an anaerobic digester system. The digester would assist in manure management practices at the dairy while creating renewable energy. Dairy manure will be the digester feedstock to create biogas. The biogas will be conditioned and utilized as fuel to drive an engine/generator. The genset will produce electricity (estimated at 487 kW/hr) for sale to the utility, PG&E, under the BioMAT tariff. The digested manure will be separated, with the solids utilized as cow bedding material. The separated liquid will be stored on-site in a lagoon prior to field spreading.	Fresno	72,377	\$ 1,000,000	\$ 5,449,749
Sousa & Sousa Dairy Digester Pipeline Project	Sousa and Sousa Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. The Calgren Dairy Fuels Cluster has already laid four miles of pipeline and begun construction of three digesters awarded CDFA funds in late 2017--scheduled to provide the state's first pipeline dairy biogas fuel by June of 2018. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	68,700	\$ 886,934	\$ 886,934
Vander Poel Dairy Digester Pipeline Project	Vander Poel Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. The Calgren Dairy Fuels Cluster has already laid four miles of pipeline and begun construction of three digesters awarded CDFA funds in late 2017--scheduled to provide the state's first pipeline dairy biogas fuel by June of 2018. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	290,060	\$ 1,972,485	\$ 1,972,485
4K Dairy Digester Pipeline Project	4K Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. The Calgren Dairy Fuels Cluster has already laid four miles of pipeline and begun construction of three digesters awarded CDFA funds in late 2017--scheduled to provide the state's first pipeline dairy biogas fuel by June of 2018. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	192,143	\$ 1,780,588	\$ 1,780,588
Lone Oak #1 Dairy Digester Pipeline Project	Lone Oak #1 Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in King's County, California. The project is 100% farmer owned by the host dairy family members of the 2000 TeVelde Trust. The project is a part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at River Ranch. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the around the Central Valley and the state.	Kings	247,703	\$ 1,869,269	\$ 1,869,269
River Ranch Dairy Digester Pipeline Project	River Ranch Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in King's County, California. The project is 100% farmer owned by the host dairy family Jack and Nicole De Jong. The project is a part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the dairy. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Kings	187,884	\$ 1,994,860	\$ 1,994,861
Double D Dairy Digester Pipeline Project	Double D Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Stanislaus County, California. The project is a part of the Aemetis Cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near at the Aemetis ethanol refinery. Once at the hub, most of the biogas will be used to fuel partner trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be used on site to fuel boilers at the Aemetis ethanol refinery to make very low carbon vehicle fuel. The project can begin generating greenhouse gas reductions very quickly since it does not require utility pipeline interconnection during this first phase.	Stanislaus	189,850	\$ 1,822,668	\$ 1,822,668
Van Exel Dairy Anaerobic Digester - Biogas to Transportation Fuel	The Van Exel Dairy complex is located just west of Lodi, CA. The dairy currently consists of four separate operations in contiguous locations. Manure from the four dairies will be consolidated from the four facilities at an anaerobic digester to be sited at Dairy #1. The digester will be a mixed plug flow design provided by DVO, Inc. Captured biogas will be scrubbed, conditioned, and injected utilizing systems provided by DMT Clear Gas Solutions ("DMT") into a PG&E gas main that runs through dairy property. Bio-methane will be purchased under a long-term 10-year offtake for use as transportation fuel consumed in California.	San Joaquin	230,529	\$ 2,750,000	\$ 10,036,400
BV Dairy Biogas	BV Dairy, a dairy operation located in Bakersfield, CA proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor will deliver biogas via a biogas gathering line to a centralized upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the gas pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Kern	205,835	\$ 1,749,596	\$ 2,085,855

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
2018 Dairy Digester Research and Development Program  
Applications Submitted to CDFA

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e)	Requested Grant Funds	Matching Funds
Lemstra Cattle Company Biogas Project	The Lemstra Cattle Co. Biogas Project near Corcoran, CA proposes to build a two-stage anaerobic digester system to treat manure effluent. The digester system includes four up-flow anaerobic sludge blanket (UASB) reactors. The reactors allow for the conversion of 90% of the organic material to biogas with methane concentrations of 80-85%. Electricity will be generated on-site using two 550 kW generators, interconnected to the grid. The developer will seek to upgrade biogas in the future to renewable natural gas. The system reduces the nitrogen levels in the effluent by 33%, providing new tools for compliance with the Dairy General Order and SGMA. In a future phase 2, a fixed film aerobic tank can cost-effectively reduce total nitrogen levels in the water by 90% in a scalable and modular manner.	Kings	122,081	\$ 2,990,000	\$ 2,992,315
Diamond H Dairy Power	The Diamond H Dairy Power Project (Project) will implement a state-of-the-art, commercial anaerobic digester at Diamond H Dairy in Madera County to substantially reduce more than 21,000 metric tons CO <sub>2</sub> e/year and generate approximately 1.1 MW of renewable energy. The anaerobic digester is a heated, mixed plug-flow, fully-enclosed flexible membrane digester, commonly referred to as a covered lagoon. Madera DP 2, LLC (the Project Applicant) will serve as the project development and operating company. The Dairy will lease property to Madera DP 2, LLC, and participate in project development and operation under a Project Operating Agreement. The additional electricity generation from the Project will move the Dairy to become one of California's first large-scale agricultural operations to be nearly net-zero energy and provide a showcase for the region.	Madera	228,392	\$ 2,100,000	\$ 6,071,387
JG Weststeyn Dairy Anaerobic Digester - Biogas to Transportation Fuel System	The JG Weststeyn Dairy is located in Glenn County near Willows, CA. It is a modern scrape dairy where the owners propose to establish an anaerobic digester to digest dairy-derived manure into biogas, quality animal bedding and nutrient-rich digestate. The digester will be a mixed plug flow design provided by DVO, Inc. Captured biogas will be scrubbed, conditioned, and injected utilizing systems provided by DMT Clear Gas Solutions ("DMT") into a PG&E gas main that runs through dairy property. Bio-methane will be purchased under a long-term 10-year offtake for use as transportation fuel consumed in California.	Glenn	172,591	\$ 2,000,000	\$ 8,468,500
Project Daisy Digester	Project Daisy is located at Vander Schaaf Dairy, which is a collection of dairy farms. This digester project will manage the waste from two adjacent farms. The two farms diverting waste to a DVO mixed-plug flow digester, rather than a covered lagoon style digester, all solids will be removed to the unit. In contrast to the covered lagoon style, the DVO mixed-plug flow digester does not need to screen solids. As a result, more methane will be diverted to produce electricity and less will be released into the atmosphere. A Dissolved Air Flotation (DAF) unit will be added to remove suspended solids from effluent after it leaves the digester. Any diversion of solids after the mixed-plug flow digester will be 0.1%.	San Joaquin	287,790	\$ 3,000,000	\$ 10,143,975
Flint Dairy Biogas project	The Flint Dairy Biogas Project near Hanford, CA proposes to build a two-stage anaerobic digester system to treat manure effluent. The digester system includes four up-flow anaerobic sludge blanket (UASB) reactors. The reactors allow for the conversion of 90% of the organic material to biogas with methane concentrations of 80-85%. Electricity will be generated on-site using one 633 kW generator, interconnected to the grid. The developer will seek to upgrade biogas in the future to renewable natural gas. The system reduces the nitrogen levels in the effluent by approximately 40%, providing new tools for compliance with the Dairy General Order and SGMA. The project features a scalable and modular second phase consisting of fixed film aerobic tanks paired with algae raceways that can cost effectively reduce total nitrogen levels in the water by up to 90%.	Kings	120,541	\$ 3,000,000	\$ 3,206,749
Riverview Dairy Digester Pipeline Project	Riverview Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. The Calgren Dairy Fuels Cluster has already laid four miles of pipeline and begun construction of three digesters awarded CDFA funds in late 2017--scheduled to provide the state's first pipeline dairy biogas fuel by June of 2018. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	90,093	\$ 1,332,070	\$ 1,332,070
Rib-Arrow Dairy Biogas	Rib-Arrow Dairy, a dairy operation located in Tulare, CA proposes to build a Tier 1 designed manure only covered lagoon digester with enhanced gas storage, gas pre-treatment and effluent distribution. The project will include a sand lane, screens and mechanical separator with screw press for solid separation pre-digester. A compressor and meter station will deliver biogas via a biogas gathering line to the centralized "East Tulare Dairy Cluster" shared upgrading facility where CO <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub> , and further H <sub>2</sub> S removal produces biomethane meeting SoCalGas Rule 30 specifications. A gas compressor lifts the biomethane pressure to SoCalGas's point of receipt acceptance specification. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	88,756	\$ 754,426	\$ 2,645,251
Vanderham Dairy Digester Pipeline Project	Vanderham Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Fresno County, California. The project is 100% farmer owned by the host dairyman Luke Vanderham. The project is a part of the Five Points Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the operational Open Sky Ranch digester. That digester was funded by CDFA in 2015, brought online in 2016, and is host to an older PG&E pipeline injection facility which is being restarted for the Five Points cluster. Once at the hub, the biogas will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Fresno	210,141	\$ 2,051,200	\$ 2,051,200
Lone Oak #2 Dairy Digester Pipeline Project	Lone Oak #2 Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Fresno County, California. The project is 100% farmer owned by host dairy family members of the 2000 TeVelde Trust. The project is a part of the Five Points Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the operational Open Sky Ranch digester. That digester was funded by CDFA in 2015, brought online in 2016, and is host to an older PG&E pipeline injection facility which is being restarted for the Five Points cluster. Once at the hub, the biogas will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Fresno	186,909	\$ 2,011,176	\$ 2,011,176
Van Der Kooi Dairy Digester Pipeline Project	Van Der Kooi Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Fresno County, California. The project is 100% farmer owned by the host Charles Van Der Kooi Dairy. The project is a part of the Five Points Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the operational Open Sky Ranch digester. That digester was funded by CDFA in 2015, brought online in 2016, and is host to an older PG&E pipeline injection facility which is being restarted for the Five Points cluster. Once at the hub, the biogas will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Fresno	137,506	\$ 1,840,632	\$ 1,840,632

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
2018 Dairy Digester Research and Development Program  
Applications Submitted to CDFA

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e)	Requested Grant Funds	Matching Funds
Van der Hoek Dairy Digester Pipeline Project	Van der Hoek Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Fresno County, California. The project is owned by Vander Hoek Dairy Biogas and is a part of the Five Points Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the operational Open Sky Ranch digester. That digester was funded by CDFA in 2015, brought online in 2016, and is host to an older PG&E pipeline injection facility which is being restarted for the Five Points cluster. Once at the hub, the biogas will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Fresno	184,233	\$ 1,481,328	\$ 1,481,328
Wilson Dairy Digester Pipeline Project	Wilson Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Fresno County, California. The project is owned by Wilson Dairy Biogas and is a part of the Five Points Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near the operational Open Sky Ranch digester. That digester was funded by CDFA in 2015, brought online in 2016, and is host to an older PG&E pipeline injection facility which is being restarted for the Five Points cluster. Once at the hub, the biogas will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Fresno	182,547	\$ 2,105,156	\$ 2,105,156
Poplar Lane Dairy Digester Pipeline Project	Poplar Lane Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in King's County, California. The project is owned by Poplar Lane Dairy Biogas LLC and is part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near River Ranch. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Kings	126,569	\$ 1,975,271	\$ 1,975,272
Lakeshore Dairy Digester Virtual Pipeline Project	Lakeshore Dairy Digester Virtual Pipeline Project is a new covered lagoon digester processing dairy manure in King's County, California. The project is 100% farmer owned by the Rock View Farms / DeGroot family. The project is a part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works, and expands on the cluster's core pipeline members. The methane-rich biogas from the digester will be hauled using clean-burning renewable CNG-fueled trucks and compressed natural gas tube trailers to create a virtual pipeline the to the cluster's central hub at River Ranch. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Kings	177,808	\$ 2,487,804	\$ 2,487,804
High Roller Dairy Digester Pipeline Project	High Roller Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in King's County, California. The project is 100% farmer owned by the host dairy family Jack and Nicole De Jong (who also own River Ranch). The project is a part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near River Ranch. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Kings	103,130	\$ 1,269,076	\$ 1,269,076
Vander Woude Dairy Digester Pipeline Project	Vander Woude Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is 100% farmer-owned by host dairy family Simon and Chris Vander Woude. The project is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	188,575	\$ 1,863,562	\$ 1,863,562
Five H Dairy Digester Pipeline Project	Five H Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is owned by Five H Dairy Biogas LLC and is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	122,183	\$ 1,851,297	\$ 1,851,297
DJ South Dairy Digester Pipeline Project	DJ South Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is owned by DJ South Dairy Biogas LLC and is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	150,175	\$ 1,810,526	\$ 1,810,526
Hoogendam Dairy Digester Pipeline Project	Hoogendam Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is owned by Hoogendam Dairy Biogas LLC and is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	142,354	\$ 1,809,452	\$ 1,809,452
Meirinho Dairy Digester Pipeline Project	Meirinho Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is owned by Meirinho Dairy Biogas LLC and is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	147,352	\$ 1,832,358	\$ 1,832,358

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
2018 Dairy Digester Research and Development Program  
Applications Submitted to CDFA

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e)	Requested Grant Funds	Matching Funds
Red Rock Dairy Digester Pipeline Project	Red Rock Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is owned by Red Rock Dairy Biogas LLC and is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	156,242	\$ 2,031,126	\$ 2,031,126
Rockshar Dairy Digester Pipeline Project	Rockshar Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is owned by Rockshar Dairy Biogas LLC and is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	124,664	\$ 1,679,093	\$ 1,679,093
Vista Verde Dairy Digester Pipeline Project	Vista Verde Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Merced County, California--opening up digester development in California's second largest dairy county. The project is owned by Vista Verde Dairy Biogas LLC and is a part of the Merced-South cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub at the center of the dairy group. Once at the hub, the biogas will be used to fuel partner and public trucks at a new compressed natural gas fueling station. The remainder of the gas will be injected into the PG&E utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Merced	140,653	\$ 1,594,109	\$ 1,594,109
Double L Dairy Digester Pipeline Project	Double L Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in King's County, California. The project is owned by Double L Dairy Biogas LLC and is part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near River Ranch. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Kings	136,148	\$ 1,762,347	\$ 1,762,347
Avalon Dairy Digester Project	Avalon Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Kern County, California. The project is 100% farmer owned by the Rock View Farms / DeGroot family. Since the project is over 20 miles from the nearest proposed digester cluster, the digester will initially begin operation with an electrical generator equipped with ultra low emissions technology. This early start will enable the project to generate over 15,000 tons per year of GHG reductions while awaiting development of new clusters to reach its location. After five years of electrical generation, the biogas can be delivered to a new hub expansions nearby, or else connected to the Calgren Dairy Fuels hub via virtual pipeline under an agreement with CDF.	Kern	151,944	\$ 2,549,141	\$ 2,549,141
Still Water Dairy Digester Project	Still Water Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Kings County, California. The project is 100% farmer owned by host dairyman David TeVelde and his family. The project is developed by Maas Energy Works. Since the project is 8 miles beyond the nearest edge of the phase 1 cluster pipeline network, and since project is fully utility approved and permitted to go online, the digester will initially begin operation with a electrical generator with ultra low emissions technology. This early start will enable the project to generate over 30,000 tons per year of GHG reductions while awaiting expansion of the Hanford-Lakeside pipeline cluster to reach its location. After three years of electrical generation, the biogas will be delivered to the Hanford-Lakeside cluster hub to fuel trucks at the on-site compressed natural gas fueling station and also be injected into the SoCalGas pipeline for off-site CNG fueling.	Kings	302,682	\$ 2,897,679	\$ 2,897,679
FM Jerseys Dairy Digester Virtual Pipeline Project	FM Jerseys Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Tulare County, California. The project is a part of the Calgren Dairy Fuels Cluster, developed by Maas Energy Works. FM Jerseys (located on the opposite of the highway and railroad tracks) will greatly expand the reach of this cluster by delivering gas via virtual pipeline--rapidly growing the geographic area served by the state's first dairy fuels cluster. The methane-rich biogas from the digester will be hauled using clean-burning renewable CNG-fueled trucks and compressed natural gas tube trailers to create a virtual pipeline to the cluster's central hub at the Calgren ethanol refinery. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Tulare	161,960	\$ 2,010,747	\$ 2,010,747
Dixie Creek Dairy Digester Pipeline Project	Dixie Creek Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in King's County, California. The project is 100% farmer owned by the host dairy family members of the 2000 TeVelde Trust. The project is a part of the Hanford-Lakeside Pipeline cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near River Ranch. Once at the hub, it will be used to fuel partner and public trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be injected into the adjacent SoCalGas utility pipeline for delivery to other CNG fueling stations around the Central Valley and the state.	Kings	113,911	\$ 1,980,311	\$ 1,980,311
Project Bessie Digester	Project Bessie is located at Hilltop Holsteins Dairy in Stanislaus County. This digester project will manage the waste from the farm operations. The waste will be diverted to a DVO mixed-plug flow digester, rather than a covered lagoon style digester, all solids will be removed to the unit. In contrast to the covered lagoon style, the DVO mixed-plug flow digester does not need to screen solids. As a result, more methane will be diverted to produce electricity and less will be released into the atmosphere. A Dissolved Air Flotation (DAF) unit will be added to remove suspended solids from effluent after it leaves the digester. Any diversion of solids after the mixed-plug flow digester will be 0.1%.	Stanislaus	280,346	\$ 2,256,250	\$ 4,315,750
Ackerman Dairy Digester Pipeline Project	Ackerman Dairy Digester Pipeline Project is a new covered lagoon digester processing dairy manure in Stanislaus County, California. The project is a part of the Aemetis Cluster, developed by Maas Energy Works. The methane-rich biogas from the digester will be transported via private, low-pressure pipeline to the cluster's central hub near at the Aemetis ethanol refinery. Once at the hub, most of the biogas will be used to fuel partner trucks at an on-site compressed natural gas fueling station. The remainder of the gas will be used on site to fuel boilers at the Aemetis ethanol refinery to make very low carbon vehicle fuel. The project can begin generating greenhouse gas reductions very quickly since it does not require utility pipeline interconnection in this first phase.	Stanislaus	89,574	\$ 1,331,291	\$ 1,331,291

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
 2018 Dairy Digester Research and Development Program  
 Applications Submitted to CDFA

Title	Description	County	GHG Emission Reduction Over 10 Years (mtCO <sub>2</sub> e)	Requested Grant Funds	Matching Funds
Udder Dairy Biogas	The Udder Dairy Biogas Project is a new covered lagoon digester processing manure in Tulare County, California. This project is part of the West Visalia Cluster, developed by California Bioenergy LLC. The Udder Dairy proposes to build a Tier 1 designed manure only covered lagoon with enhanced gas storage, gas pre-treatment and effluent distribution. Gas marketing, dairy processor and hauler commitments guarantee 100% delivery of the project's biomethane as R-CNG for vehicle fuel use in California. California Bioenergy, 4 Creeks Engineering, Anaergia, 4C Global and SoCalGas comprise the project team.	Tulare	135,706	\$ 1,153,459	\$ 2,049,345
Project Hakker Digester	Project Hakker Digester is located at Hakker Dairy in Kings County. This digester project will manage the waste from Hakker Dairy and several other adjacent dairy farms. The diverting waste goes into a DVO mixed-plug flow digester, rather than a covered lagoon style digester, all solids will be removed to the unit. In contrast to the covered lagoon style, the DVO mixed-plug flow digester does not need to screen solids. As a result, more methane will be diverted to produce electricity and less will be released into the atmosphere. A Dissolved Air Flotation (DAF) unit will be added to remove suspended solids from effluent after it leaves the digester. Any diversion of solids after the mixed-plug flow digester will be 0.1%.	Kings	494,357	\$ 3,000,000	\$ 16,716,000
Project Solo Digester	Project Solo Digester is located at Solo Dairy in Kern County. This digester project will manage the waste from Hakker Dairy and several other adjacent dairy farms. The diverting waste goes into a DVO mixed-plug flow digester, rather than a covered lagoon style digester, all solids will be removed to the unit. In contrast to the covered lagoon style, the DVO mixed-plug flow digester does not need to screen solids. As a result, more methane will be diverted to produce electricity and less will be released into the atmosphere. A Dissolved Air Flotation (DAF) unit will be added to remove suspended solids from effluent after it leaves the digester. Any diversion of solids after the mixed-plug flow digester will be 0.1%.	Kern	510,935	\$ 3,000,000	\$ 16,716,000
Project Parreira Digester	Project Parreira Digester is located at Parreira Dairy in Kings County. This digester project will manage the waste from Hakker Dairy and several other adjacent dairy farms. The diverting waste goes into a DVO mixed-plug flow digester, rather than a covered lagoon style digester, all solids will be removed to the unit. In contrast to the covered lagoon style, the DVO mixed-plug flow digester does not need to screen solids. As a result, more methane will be diverted to produce electricity and less will be released into the atmosphere. A Dissolved Air Flotation (DAF) unit will be added to remove suspended solids from effluent after it leaves the digester. Any diversion of solids after the mixed-plug flow digester will be 0.1%.	Kings	490,699	\$ 3,000,000	\$ 16,716,000
<b>Total</b>			<b>14,691,811</b>	<b>\$ 143,079,566</b>	<b>\$ 261,958,875</b>