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Jost Farms, Inc.	This proposed project includes installing a dual line drip irrigation system on 76 acres of stone fruit that is currently flood irrigated. The existing inefficient 50HP pump will be replaced with a highly efficient 75hp pump with a Variable Frequency Drive. A flow meter and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	$63,114.56	Tulare
David te Velde Dairy	The proposed project involves making efficiency upgrades on 2 ranches. Soil moisture sensors, flow meter monitoring, and pump and valve automation are proposed on 156 acres of grapes and 800 acres of tomatoes. The existing flow meters and valves will be retrofit so they can be remotely monitored and controlled. The proposed monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$96,821.90	$0.00	Tulare
Casey Jones	This proposed project includes installing a dual line drip irrigation system on 148 acres of stone fruit that is currently flood irrigated. An inefficient 25hp pump will be replaced with a new, highly efficient,100hp pump with a Variable Frequency Drive. A flow meter and in-field moisture monitors will be installed. Flow and moisture components will be remotely monitored and controlled. The monitoring and scheduling software will incorporate local CIMIS data and real time field data to precisely time and execute irrigations.	$100,000.00	$229,293.64	Fresno
R&A Atwal Farms, LLC	This project proposes updating all existing sprinkler heads to more efficient ones, and installing moisture sensors, and a flow meter on the main irrigation pump.	$30,123.38	$12,660.00	Yolo
French Creek Ranch	The project consists of five major components that will reduce energy use, water consumption and Greenhouse Gas Production (GHG) at French Creek Ranch in Siskiyou County, which is in a severely economically disadvantaged community (SDAC). The project covers 12 acres currently used for a single cutting of hay production, with secondary cattle pasture, which will remain unchanged post project. 1.The pre-project pump is a 10-horse submersible pump with 54% efficiency. Post project will be a 10-horse submersible pump with 78.5% efficiency. Pacific Power and Light currently services the pump with electricity, which will be converted to solar powered electricity. 2.The irrigation delivery will be converted from a traveler big gun sprinkler to a center pivot. 3.A conversion of 2585 ft. existing 3 & 1.9-inch mainline water delivery pipe to 1400 ft. of 4-inch pipe will further reduce friction losses. 4.Installation of soil moisture sensors as well as utilizing CIMIS to further enhance irrigation scheduling. 5.To improve efficiency of water application, this project will also install, in-line flow gaging to measure water use, as required by AB 88, and to aid in water application calculations. The proposed project also includes attending irrigation management training, mulch application, and cost share and in-kind match provided by the landowner totaling $26,286.50 and consisting of 24% percent of project costs.	$84,727.89	$26,286.50	Siskiyou

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Bennett AgComm, LLC	The proposed project includes a farm split by a county road, with a pump on each side,tied together with a common mainline. This project is only going to include the North Side of Picard Road. The Farm field is 120 ac of Alfalfa and Alfalfa/Grass irrigated by Center Pivot and 15 acres of grain which is flood irrigated corners. The pump for this site is 125 Hp submersible pump with a VFD controller. This pump is controlled by a pressure transducer to operate at 30 psi to pump water to a center pivot with LESA sprinkler application package. There are currently moisture sensors and a magnetic flow meter installed and this proposal would include installation of a weather station to enhance Irrigation Water Management. This pump also supplies irrigation water to the adjoining field as well as maintain the operating pressure in that center pivot. The proposal also includes the installation of 85.4 KW of solar panels to reduce the GHG emissions of this pumping plant.	$99,893.64	$29,884.95	Siskiyou
Bennett Farming, LLC	This 155 acre organic alfalfa farm located in Butte Valley in Siskiyou County is irrigated with a 50 Hp line shaft turbine pump with a center pivot providing irrigation for 133 ac and the remainder is flood irrigated laser leveled corners. This proposed project would include the replacement of the 50 Hp motor to a new high efficiency 50 Hp electric motor along with a VFD controller to manage the different pressure levels required from the pumping plant due to pivot vs flood systems. The pumping plant serves only the pivot system or the flood system at any given time, never both at the same time. This project would also addresses the issue of Irrigation Water Management with the installation of a flow meter, weather station, and telemetry pivot products to allow for the flow of control commands and management data between the central office location and the farm. The final proposed step would include the installation of a 44KW renewable energy source of solar panels to the farm to reduce the greenhouse gas emissions.	$80,279.60	$15,525.00	Siskiyou
Manuel C. Leal & Son Dairy	This project proposes replacing the current 130 hp natural gas well engine with a 100 HP electric motor powered by a 100 HP rated VFD panel. Also, design and installation of a lined irrigation pond will allow to utilize surface water from Tulare Irrigation District to irrigate the orchards via drip irrigation. Water would be pumped from the reservoir by a 40 HP booster pump powered by a compatible VFD panel. Currently, flood irrigation with surface water is being used.	$99,973.91	$28,345.00	Tulare
Bosque Verde, LLC	This project includes improving irrigation water management practices on a 106 acre block of almonds. Soil moisture stations will be added to the field to monitor irrigation efficiency through viewing the data online that is relayed through a telemetry network. Also, the current 100 Hp pump efficiency will be monitored by adding a flow meter to the discharge, and pressure sensors before and after the filters. This would be connected to a telemetry network as well. A solar array is intended to be installed to the pump to power it. Furthermore, the pump is proposed to be repaired to raise the pumping efficiency. By accessing to this information, along with ET data from a proposed ETo Station, water use can be reduced as well as GHG Emissions by irrigating more effectively.	$100,000.00	$44,149.53	Tehama
Richard Samra	This project proposes improved irrigation scheduling and installation of a new 54.4 kW solar photo voltaic system to reduce water use and Greenhouse Gas emissions on a 177 acre vineyard located in San Joaquin County. A weather station and soil moisture probes will be installed to inform irrigation scheduling.	$91,582.00	$34,613.00	San Joaquin

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Roxbury Ranch LLC	This proposed project includes conversion from hand move sprinkler & flood irrigation with gated pipe on onions to drip irrigation on almonds (Field 101, 90 Acre). The project includes: (1) converting an existing inefficient electric pump powered by a 237 horsepower diesel generator to a new 50 horsepower premium efficient electric pump powered by electricity (PG&E), (2) installing a 50 horsepower variable frequency drive electric panel, (3) installing a new drip irrigation system per Irrigation Design & Construction (IDC), (4) adding an automation system for valve, booster pump, & fertilizer control, (5) installing 3 soil moisture probes (1 per irrigation set) with remote access to help schedule irrigation events, and 3 inline pressure sensors with remote access to verify irrigation events occurred at the correct time & duration, (6) installing 1 field weather station with remote access to determine field weather conditions, and a magnetic flowmeter to record the amount of water applied to the field.	$100,000.00	$170,035.00	Merced
JS Johal & Sons Inc.	The goal of this project is to replace an old 30HP electric pump and a 40HP Diesel pump with a 60HP electric pump. The 60 HP pump that will replacing the 2 currently in operation will be located at the main shop where surface water is available. This water will be piped to the field where the two existing pumps are located. The new 60 HP pump along with 4 other meters on the property will be powered by a 147.55kW solar system. Installation of soil moisture sensors and a weather station are also part of the proposed project.	$100,000.00	$325,626.00	Yuba
Jose Garcia	The goal of this project is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. The farm is currently flood irrigated and there is no flow meter installed. The farm relies on groundwater and does not receive supplies of surface water that could be measured. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$84,996.13	$4,365.00	Fresno
Kou Yang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	$26,662.42	Fresno

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Tchieng Yeu	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$71,339.80	$6,339.00	Fresno
Yee Vue	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$68,114.53	$4,455.00	Fresno
Pang Chang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$60,333.99	$3,213.00	Fresno
Dou Moua Lee	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 20 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	$19,545.34	Fresno

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Chong Blong Yang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$77,814.93	$6,852.00	Fresno
Phen Vue	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$77,978.93	$5,364.00	Fresno
Kham Boriboun	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$76,941.29	$5,247.00	Fresno
Antonio Ybarra	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Jain jets will be installed on the tape at 36" intervals. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$81,771.24	$2,630.00	Tulare

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Jose Vasquez	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Jain jets will be installed on the tape at 36" intervals. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is irrigated by a single,10 HP submersible pump with a flow rate of approximately 95 GPM. The farm is completely irrigated by flood irrigation, using groundwater from a single well. There is not a flow meter currently installed. The farm relies on groundwater and does not receive supplies of surface water that could be measured. The current crop includes Citrus.	$73,027.62	$1,547.00	Tulare
Canebrake Vineyards	The project will impact 28 total acres of drip irrigated grapevines. The current irrigation pump, located on the eastern side of the pond, distributes irrigation water from the pond through two main lines, one 6-inch pipe and one 8-inch pipe, and then to several sub laterals which are 50 feet apart. The proposed project would be replacing a tier 0 stationary 82-hp diesel pump engine for a new tier 4 stationary 100-hp diesel pump engine. Also, the current irrigation pump will be replaced with a newer model. The pump station is currently without a flow meter and the project is requesting to equip the pump station with an 8-inch flow meter. Replacing the diesel pump engine would provide increased pumping efficiency, improved fuel efficiency, reduction in air quality pollutants and in energy use. Installing a flow meter at the location would allow measuring of water out flow and improved water usage monitoring. The project would install two soil moisture sensors to assist with irrigation scheduling, including optimizing irrigation timing and length and providing insight on overall irrigation effectiveness.	$69,523.90	$1,000.00	Mendocino
Chi Chong Yang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 5 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated by flood irrigation, using groundwater from a single well. There is not a flow meter currently installed. The farm relies on groundwater and does not receive supplies of surface water that could be measured.	$68,615.65	$2,484.00	Fresno

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Will Scott	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 20 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$100,000.00	$13,437.86	Fresno
Zia Xiong	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 15 HP submersible pump with a flow rate of approximately 306 GPM. There is not a flow meter currently installed.	$100,000.00	$24,966.57	Fresno
Tong Vang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 25 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 25 HP electric turbine pump with a flow rate of approximately 509.1 GPM (No flow meter currently installed).	$100,000.00	$24,082.07	Fresno

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Triple S Lamb Feeding, LLC	This project allows for the installation of soil moisture monitoring units and weather stations across 233 acres of grapevines to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield. Local weather and ET data will be taken into account when scheduling irrigation events to reduce excessive pumping and water use. Existing electric well pumps (200 hp and 150 hp) and booster pumps (30 hp and 50 hp) will be used to supply water, and flow meters will be installed to monitor and record water applied. The use of a soil solution machine will allow me to amend soil chemistry by adding soluble calcium, improving water infiltration and increasing the soil's holding capacity, minimizing water lost to runoff or deep percolation.	$100,000.00	$1,258.66	Tulare
Nao Pao Vang	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 25 HP electric turbine pump with a flow rate of approximately 509.1 GPM (No flow meter currently installed).	$67,821.65	$4,464.00	Fresno
Raymond Dutro Farms Inc	This project proposes to include irrigation management practices on 268 acres. Soil moisture stations will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, pumps efficiency will be monitored by adding a flow meters to the discharges, and pressure sensors before and after 2 of the filters. This would be connected to a telemetry network as well. Also, an existing diesel pump will be aimed to be converted to electric with a VFD. By accessing to this information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$100,000.00	$6,183.59	Tehama
Al Smith	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Drip lines installed on the vines about 1 foot above the soil. This system will use the existing 15 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 25 HP electric turbine pump with a flow rate of approximately 509.1 GPM (No flow meter currently installed).	$100,000.00	$20,772.71	Fresno

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Heu Long	The proposal is to install a drip irrigation system and to set the operating condition of the pump to match the requirements of a drip irrigation system. Crops will remain the same (diversified specialty vegetables). The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Layflat sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the layflat hose. Drip lines will either be on the soil surface or buried 2-3 inches beneath the soil surface on vegetable beds. This system will use the existing 10 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. The water source is groundwater from a single well on the property. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values. The farm is currently irrigated (completely flood) by a single, 25 HP electric turbine pump with a flow rate of approximately 509.1 GPM (No flow meter currently installed).	$65,512.40	$4,872.00	Fresno
Sang Nam	This project proposes to install 61.6-kilowatt (KWH) solar panels to provide renewable electricity for the pump system. It is estimated that 100% of the electricity usage from SCE will be replaced by the renewable solar energy. In addition, Tule ET sensors, soil moisture sensors with data loggers, and flow meter will be installed to efficiently make accurate irrigation decisions about when and how much to irrigate. Furthermore, the applicant will complete an irrigation-training course and implement compost application during the project term. This 15.7-acre orchard is located in Temecula, California and currently uses electricity from Southern California Edison (SCE) for an on-site groundwater well with a pump system to irrigate the avocado trees of the orchard. The groundwater well employs a pump system rated at 30 horsepower (HP) in conjunction with a submersible electric motor. The current annual electricity usage for the pump system is about 121,000KWH.	$99,996.00	$37,508.00	Riverside
AYLENE NORRIS	consumption and build healthy soils. The project will demonstrate the benefits of 1) installing low pressure irrigation system to reduce pumping and energy use, and 2) monitoring the soil moisture in three locations that have different type of soils in order to manage irrigation frequency and duration. In addition, the project will implement two conservation management practices (mulching and composting) on a 5 acre fruit orchard. The installation of a new booster pump, variable frequency drive (VFD), soil moisture sensors, low pressure irrigation system, pressure compensating micro sprinklers and mulching will help reduce Greenhouse Gases (GHG) and save water in operating the orchard. Changes on pump efficiency, water consumption, soil composition, GHG emissions, crop yield and quality will be evaluated before and after practice implementation. The goal will be measured by IRROmesh logging system, soil analysis and water usage comparison for three consecutive years. The outcomes will be used to evaluate the adopted practices and to share the information to CDFA.	$42,397.85	$7,280.00	Santa Barbara

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Sran Farms	This proposed project will have plant, soil, and weather monitoring sensors as well as automated pump & flow monitoring allowing to closely monitor real time water usage on phones and computers. It will all be automated allowing to schedule irrigation events precisely when needed reducing pumping and unnecessary irrigation events. It will also mitigate nutrient leaching and loss, reduce humidity in the orchard causing less diseases, as well as allow the trees to grow almost perfectly because they wont be stressing from too little water or suffocating from too much water. Also, automated valves will be added to split the south set into subsets that will allow to schedule irrigations based on ET, and plant stress but also soil moisture percolation differences between the west side and east side of the south set. In addition, a VFD will be installed which will provide maintaining pressure despite having different set areas with these new smaller irrigation sets thus saving energy as well as emitting less greenhouse gases. Lastly, FarmX's NDWI and NDVI images will be used to determine areas of the field that are over watered.	$76,170.28	$62,778.13	Fresno
Al Smith	This project will convert the existing flood irrigation system to drip irrigation. The proposed system will include a buried PVC manifold, riser sub-mains, and 18mm drip tube with k-curls to be attached. System will also include control valves, a sand media filter station, and a Jain logic monitoring system. Greenhouse gas emissions will be reduced by improved energy efficiency of the electric pump. The current pump is probably designed for flood irrigation and is estimated to be 30-40 years old. The proposed system includes a buried PVC manifold from the pump to several valves corresponding to irrigation sets. Riser sub-mains will be connected at the valves. T-tape drip lines will be directly attached to the riser. Drip lines installed on the vines about 1 foot above the soil. This system will use the existing 20 HP electric pump, which will be either retrofitted or replaced to increase efficiency and provide greater pressure for the drip irrigation system. Soil moisture sensors will be used to determine irrigation scheduling, and the flow meter will be used to estimate the amount of water applied and compare it to known values.	$92,913.22	$17,787.00	Fresno
Jose Antonio Sanchez Zamora	The purpose of this project is to convert 18.0 acres of Citrus and Stone Fruit from an inefficient furrow irrigation to Micro-irrigation (Fan-Jet system). The project will include a new and more efficient booster pump to pressurize the irrigation system and allow for ditch water to be utilized when available. In addition, the project will have a new sand filter, flow-meter and moisture sensors, increasing the producers ability to match irrigation to local ET conditions, and reduce water and nutrient losses to leaching.	$99,907.36	$1,950.52	Fresno
Dan Clenney Farms	This proposed project will install a new soil moisture monitoring system, flow meter, and solar system. This installation will allow to monitor, account and improve our irrigation management in a 35 acre almond farm. The system will consists of soil moisture sensors at different depths. Scheduling irrigation with this system along with the use of CIMIs data will improve irrigation efficiency. This also enables keeping records of water usage in the fields. The solar system will allow to reduce GHG's emissions from water pumping energy usage requirements.	$88,804.41	$11,092.60	Fresno

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Don Schroer	The purpose of this project is to create an overall more efficient irrigation and energy system. This includes installing a flow meter and a Variable Frequency Drive, (VFD), at the pump to track water flow and pressure, purchasing a pressure chamber to measure water needs of individual trees, and installing a surface water pump station to more efficiently pump water while reducing greenhouse gases. Also, 8 more panels will be installed to already existing solar system to better maximize his energy and further reduce greenhouse gases. Finally, two moisture monitoring stations will be installed throughout the property to track soil moisture, temperature, and humidity using evapotranspiration (ET) technology to create a sustainable surface water irrigation plan.	$100,000.00	$15,447.61	Glenn
Shinta Kawahara Company	This project will install a solar photovoltaic system to power the farm's groundwater pump, switching from fossil fuel based electricity to a renewable energy source. It will also install a variable frequency drive (VFD) at the well pump to improve energy use efficiency and reduce GHG emissions from groundwater pumping. Finally, through this project the farming operation will acquire a flowmeter and five soil moisture sensors to improve irrigation scheduling and water conservation.	$94,728.00	$5,000.00	Santa Cruz
Cipponeri Orchards	This project will install a FarmX IWM-3 irrigation management solution to monitor canopy NDVI and water content, soil moisture, plant health, drip line pressure and use this information to schedule irrigation and improve irrigation efficiency and reduce wasted water and pumping energy. Irrigation will be scheduled for 3 and possibly 4 sets based on the FarmX recommendations and scheduling also using valves in the field. These smaller sets will be managed and scheduled by Installation of a flow meter, improvement of pump efficiency by retrofitting the pump and installation of a VFD. Balico ranch is a 120 acre almond orchard currently irrigated by an electric 150HP well and a drip irrigation system.	$99,912.32	$45,610.00	Merced
Kory Ley	The proposed project will cover the entire 55 acre walnut orchard. No upgrade will be made to the 40 hp pump, which can operate the new low-pressure micro-sprinklers. The new system will run at a lower pressure, operating for approximately 144 hours/month. The lower pressure will allow for greater water penetration during the irrigation time, saving on water run-off, making the irrigation more efficient. In addition solar panels will be installed to virtually remove this pump from the power grid. Currently this 55 acre walnut orchard is irrigated by 3" aluminum sprinkler pipes. The 40 hp pump running this irrigation receives power exclusively from SMUD. The high pressure needed to run this system requires 7 sets/irrigation to cover the entire orchard, with each set running 24 hours; operating at a total of 168 hours/month.	$99,767.21	$42,693.48	Sacramento
Steven Bickley	This project will include installing remote soil moisture sensors(2), pressure sensor and flow meter. Moisture sensors will read soil moisture at 6" down to 60", and a pressure sensor attached directly to the irrigation line to monitor for pressure differences throughout the season. The sensors and a flow meter in combination will help determine irrigation timing based on crop need and known water application rates all in real-time for an increase in irrigation efficiency and water savings. This project also plans on installation of 33.2 kW solar array to offset 100% PG&E energy use for a 100hp pump irrigating walnuts to reduce GHG.	$97,248.68	$0.00	Butte

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Hyske Orchards	The proposed project will install a solar photovoltaic (PV) system to power the pump (changing from electric to solar), soil moisture monitoring, Davis weather station monitoring, installation of a flowmeter, and the addition of a variable frequency drive (VFD) to the pump and energy system. The pre-project conditions include 17.72 acres of cherries irrigated by micro sprinklers with a 30 hp, 240 volt submersible pump (electric). The irrigation well is 410 feet deep and the pump is at 189 feet. The merits of this SWEEP project include significant water savings and meaningful greenhouse gas (GHG) reductions.	$90,791.12	$12,000.00	San Joaquin
Eco Terreno, Inc	This project will reduce on farm water use and decrease Greenhouse Gas emissions through conversion of irrigation pumps powered by diesel fuel to off-grid solar power, improved irrigation scheduling and automation of pump functions in Cisne Vineyard. A soil moisture probe and infrared plant stress sensor will be installed at a representative location to inform irrigation scheduling. The pumping stations and valves will be automated for pump control.The diesel irrigation pumps will be converted to electric pumps powered by the installation of a 4.5 KW solar photo voltaic system on an existing shed structure.	$99,718.00	$0.00	Sonoma
Sanjiv Midha	This project proposes switching from electricity to solar and installing moisture sensors to decrease greenhouse gas emissions and increase water savings.	$80,490.21	$91,953.00	Sutter
Amarjit Sohal	The purpose of this project is to install a PV Solar Energy System on my 105 acres of almonds to cut down on greenhouse gas emissions and electrical costs. Also moisture sensors, a weather station and VFDs will be installed.	$64,686.88	$67,581.83	Yuba
JW Farms	This project will support installation of a 7.7 kW solar photovoltaic system to power our groundwater pump and irrigate our 14ac organic farming operation using clean renewable energy. With this project a new flowmeter and six soil moisture sensors will be installed, to better track and improve irrigation scheduling and conserve water.	$35,692.20	$5,500.00	Santa Cruz
Nathan Stewart	This project proposes transitioning from a flood irrigation system to a drip line irrigation system, add moisture sensors & a flow meter in 17 acres of citrus. It also plans to update the existing pump.	$46,210.97	$50,174.23	Tulare
Table Bluff Farm LLC	This purpose of this project is to reduce dependence on pumped groundwater thus reducing water bills through the implementation of micro drip irrigation systems for 1.0 acre market garden farm, and .5 acre cut flower market garden. Also, the goal is to design and implement a low pressure micro drip irrigation system for the current NRCS grant approved 30 x 96 ft greenhouse and 1.0 acre market garden crops and .5 acre cut flower garden to reduce water usage. Low Pressure Micro drip system will include drip irrigation to market garden crops on 1 acre and .5 acre cut flower garden. Use of 8 in spacing pre filled Netafim drip system .875 gph at 10000 ft of drip irrigation line with multiple zone controlled timers and emitter spacing for various crop spacing in garden beds and rows will be monitored using flow meters and moisture sensors, and irrigation controls. Netfim drip line systems and water meters will be used as outlined in the Budget Worksheet. The goal of this program is to improve soil quality and health while reducing water usage on our irrigated crops from overhead sprinkler systems to micro drip low pressure systems.	$9,505.00	$0.00	Humboldt

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Bellino Farms	Bellino Farms proposes the installation of soil moisture monitoring, weather (ET) monitoring, and the use of existing flowmeters. A flow meter will be added to the pump at Swiss Ranch which is the only pump currently without a flowmeter. The Harrold Ranch will also change from micro-irrigation to drip and will have a new electrical pump installed. This pump will supply the Harrold and Lemon Ranches with South San Joaquin Irrigation District water instead of the existing groundwater pump. Although this part of the project will save water and will result in GHG reductions, no funds were requested for this work, but are included as cost-share contributions. Four VFDs are also being proposed for the ranches existing electrical pumps. Installation of soil moisture monitoring, weather (ET) monitoring, and the existing flowmeters will help save water and consequently decreasing pumping time, reducing GHG emissions. As first time SWEEP applicants, an irrigation course will also be taken at applicant's own expense. The project is located in a critically over-drafted groundwater basin (Basin 5-22.01, San Joaquin Valley Basin Eastern San Joaquin Sub-basin). Also, stormwater will be captured and reused into the land management practices of all 7 of our ranches. Compost, mulch, and resident cover will be used.	$99,806.56	$163,621.47	San Joaquin
Ronald T. Oye	The proposed project involves the installation of a 30hp electric pump with a Variable Frequency Drive to enable receiving and using surface water from North San Joaquin Water Conservation District, instead of groundwater, to irrigate three different sized blocks of trees. The proposed irrigation improvements include: (1) a grower-owned pump station with a centrifugal booster pump, flow meter, and trash cleaning conveyor on a channel used as part of the NSJWCD conveyance system; (2) the pipe, couplings, and valves needed to connect the pump station to our existing irrigation system; and (3) an Irrometer Watermark moisture sensor. The proposed changes to the existing on-farm irrigation system will save electrical power because the farm will pump surface water from Pixley Slough, as opposed from underground, using the district's new high-efficiency pump. Use of surface water will only need minor boosting of pressure from the district's distribution channel to the farm. The proposed changes will result in water savings by providing tools and information to better manage the total volume of water we apply to the crops. The reduced pumping and use of higher efficiency pump will reduce greenhouse gases.	$86,016.10	$3,300.00	San Joaquin
Mark Evans Jr	This project proposes to switch from flood irrigation to micro irrigation and install a moisture sensor.	$45,716.88	$52,712.73	Sutter
Estate Vineyards LLC	This proposed project will impact 376 acres overlying the over drafted Paso Robles ground water basin. This project will reduce on farm water use and decrease greenhouse gas emissions through improved irrigation scheduling and pump retrofitting at three wells on two APNs. Weather stations capable of calculating ET and soil moisture probes will be installed at representative locations to inform irrigation scheduling. The pumping stations will be retrofitted with automation for pump on/off, and well water level, flow rate and pressure monitoring systems. Creston Rd Vineyard is a 625-acre vineyard located near Paso Robles, Ca.	$99,973.00	$568.00	San Luis Obispo

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Dwinger Family Farm	This project incorporates new technology to reduce overall water usage and greenhouse gas (GHG) emissions. The project includes initial installation of a drip system for a new orchard with conversion to a micro sprinkler irrigation system with frost controls incorporated, real time remote field monitoring sensors, flow meter, a weather station, and upgraded pump, all of which will help irrigate more efficiently and reduce (GHG) emissions. The sensors are 120cm long and have a sensor every 10cm. The sensors will also assist fertilizer application so as to not over fertilize, and soil temperature at various depths. Soil moisture sensors will be used to determine the appropriate interval between irrigation, depth of wetting, and depth of extraction by roots and adequacy of wetting. These remote field monitoring units will include weather sensors to help irrigate based on evapotranspiration (ET), and prevent unnecessary irrigation events. Soil temperature sensors will help fertilize appropriately at the best temperatures. Flow meter will also aid to improve water use efficiency by allowing the Recipient to quantify the water used per irrigation events. These improvements will work together with an existing 18.31 kw solar system (installed 12/15 at 100% applicant cost) to reduce GHG emissions.	$66,830.00	$13,775.00	Sutter
Rancho Soledad DeLuz	This project proposes to improve the existing irrigation system by installing a flow meter, a VFD controller, soil sensors and if need be, replace the current sprinkler heads to more efficient ones. The goal is to reduce our water usage by at least 15% and reduce GHG. The proposal also includes the installation of solar power consisting of 72 LG Modules of 24.12kW DC solar panels. These panels of renewable energy will supply all necessary power to operate the pump system and reduce GHG emissions. The current irrigation system on the 40 acre farm is outdated and inefficient. The primary water source is an on site ground water well powered by a 30 hP submersible turbine pump which is powered by (SDG&E) electricity. A pump test reported an overall pumping efficiency of 61%.	$100,000.00	$34,560.00	San Diego
Dosanjh Brothers	The project uses the proven science of open-air crop carbon enrichment for water savings and GHG removal. This project encompasses 20 acres of almond crop under an open-air carbon enrichment biosphere with 20 % less irrigations water supplied, compared to 20 acres of control crop not under carbon enrichment with a normal irrigation rate of irrigation water supplied. The project will be composed of a source of a CO2, specifically from a refinery with 100,000+ tons/year of CO2 in clean flue gas, a portion of which will be cooled and redirected to the almond orchard directly across the street. Also, the project will be composed of provisions to condition and deliver the CO2 to the crops, specifically with ducting, a cooling system, and a blower, and a system to feed the CO2 to the almond orchard canopy. The orchard is irrigated with a well pump (125HP) and canal water using micro sprinklers. Water stress and usage will be measured using pressure bomb and soil tests. Water application will be carefully controlled and monitored in the system with flow meters and irrigation schedule logs, both for the treated acreage and the control acreage.	$100,000.00	$100,000.00	Kern
P & K Farms	This project will support implementation of a 20.8 kW solar PV system to power our groundwater pump and replacement of an old variable frequency drive (VFD) with a new and more efficient unit. Together, these two improvements will help reduce greenhouse gas emissions and conserve water in our farming operation.	$99,953.66	$19,350.00	Monterey

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Rosalio Curiel	This project includes multiple properties encompassing 47.57 acres that will include irrigation management practices on. Soil moisture stations will be added out in the field to monitor irrigation efficiency by being able to view the data online that is relayed through a telemetry network. Also, VFDs and Motors will be purchased for the existing pumps. This would be connected to a telemetry network as well. In addition, a solar array is intended to be added to the pumps as well to power them. By accessing to this information, along with ET data from a proposed ETo Station, water use and GHG Emissions will be reduced by irrigating more effectively.	$100,000.00	$13,844.73	Tehama
Advanced Growth Management	This project proposes to install 2 soil moisture monitoring stations and a 16.8kw solar array on 20acres of mature almonds planted in 2011.	$56,870.00	$1,370.00	Fresno
Grapeman Famosa Ranch LP	This project allows for the installation of soil moisture monitoring units and a weather station across 294 acres of grapevines to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield. Local weather and ET data will be taken into account when scheduling irrigation events to reduce excessive pumping and water use. Three existing electric pumps (500 hp, 300 hp, and 250 hp) will be used to supply 80% groundwater and 20% surface water, and a flow meters will be installed to monitor and record water applied.	$81,779.14	$0.00	Kern
Behring Family LLC	The purpose of this project is to install a flow meter, 125 HP VFD pump and 29.58 kW solar system to supply energy for the new irrigation system in a 100 acres of land in transition from almonds to walnuts. A 40 year old, high impact, solid set sprinkler system will be replaced with a low pressure, low flow, micro sprinkler system. A new irrigation design and the installation of the new VFD pump will allow the recipient to irrigate entirely from one well. An old diesel well is on the property as well that was used for the almonds, but with the new irrigation system, it will not be used for the walnuts. (Diesel fuel records in 'Additional Attachments' to show what recipient will be cutting out).	$100,000.00	$190,945.71	Butte
Melinda Nickler	This project will be a complete overhaul or the pump and irrigation system that serves 18 acres of prunes and 9 acres of walnuts. A new pump and filtration system complete with flow meter will replace the 24 year old, highly inefficient system. A solar array will be installed to provide renewable power to the pump. The 24 year old, inefficient drip irrigation system in the 18 acres of prunes will be replaced and soil moisture monitoring equipment will be purchased to ensure efficient water usage.	$98,795.26	$5,000.00	Tehama
Sycamore Marsh Farm	This project plans to significantly improve water efficiency and reduce greenhouse gas (GHG) emissions at field S3 of SMF's existing farm at the Sycamore Marsh Farms (SMF). The proposed funding will allow SMF to purchase and install irrigation infrastructure needed to transition crops at field S3 from flood-irrigated alfalfa (50 acres) to drip-irrigated almonds (50 acres), greatly reducing applied water demand. In addition to the crop transition, SMF will also install a new VFD system on the existing 60 HP booster pump (downstream of the existing 150 HP well, which already has a VFD) for the project, install a flow meter, and purchase and operate a new pressure chamber (pressure bomb) system and 8 new tensiometers to precisely determine watering amounts and schedules, while avoiding over-application.	$78,527.98	$3,950.00	Colusa

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Wawona Farm Co	This project allows for the installation of 3 new drip systems, 6 VFD's and soil moisture monitoring units across 4 ranches totaling 143 acres of stone fruit to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield. There are 6 existing electrical pumps (40 hp, 20 hp, 20 hp, 15 hp, 20 hp, 15 hp) used to supply 100% groundwater, and flow meters will be installed with the new systems.	$100,000.00	$104,632.48	Tulare
F & S Solari	The project includes installation of real time remote field monitoring sensors (pressure sensors and soil moisture sensors) and flow meters to improve irrigation efficiency. It incorporates a VFD (one of the two pumps captured by this project already has one) and a solar system to help reduce greenhouse gas (GHG) emissions. A weather station will be incorporated to help irrigate based on evapotranspiration (ET), and prevent unnecessary irrigation events. Flow meters will also aid to improve water use efficiency by allowing the recipient to quantify the water used per irrigation event. This project will help improve water use efficiency and, with the introduction of solar, help to reduce GHG emissions. The grower will attend an irrigation workshop. The project location is within a critically over-drafted area. F&S Solari will be installing an additional solar system at their expense within the same calendar year at the opposite end of the same ranch in a commitment to improve efficiency and save on emissions. Telemetry, sensors, flow meters and a weather station will also be added this year to this secondary location at the owners expense. F&S is awaiting the drilling of a new well at this location to incorporate a VFD at a future date.	$99,810.98	$311,517.05	San Joaquin
Jessie Maragoni - Trustee of Maragoni Marital Appointment Trust	This project will reduce on farm water use and decrease greenhouse gas emissions through improved irrigation scheduling and installation of a 20.4 solar P/V system on one APN. A weather station capable of calculating ET, and soil moisture probes will be installed to inform irrigation scheduling. The 20.4 KW system will produce 33,215 kWh/year. The pump station will be upgraded with water level, flow and pressure monitoring and automation of pump functions. The project area overlies the impacted San Joaquin - Kings ground water basin. Indianola Ranch is a 19-acre almond orchard located in Fresno County.	$88,541.00	$19,200.00	Fresno
Walter Mizuno	The focus of this project is to convert 37 acres of flood irrigated stone fruit fields into a modern, micro-sprinkler based irrigation system. The proposed system will integrate data from soil moisture sensors, as well as weather station and crop ET, to determine the proper timing and amount of irrigation water to apply. Another expected benefit will be the ability to apply nutrients in the correct amounts directed toward the root zone at the proper time, saving material, minimizing leaching, and providing optimum crop benefit. The equipment being requested for the conversion will be integrated with a recent upgrade to the farm's irrigation pump which includes a VFD. The implementation of this system is expected to save significant amounts of water and reduce GHG emissions in the process compared with the flood system currently employed.	$33,266.61	$56,464.51	Fresno

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G and G Farms	This proposed project covers 53 acres of a 128 acre operation of mature pecans. This portion of our operation has been identified as the most inefficient part of our irrigation system by the Natural Resources Conservation District of Tehama County (NRCS) thru an irrigation system evaluation. Recommended changes will be made to the current irrigation system as recommended by NRCS and incorporate irrigation management practices. Soil moisture monitoring stations will be added to monitor irrigation effectiveness and efficiency, integrated weather station to track ET data, and a flow meter to monitor the efficiency of the current 200 HP pump with VFD. These added systems will track all data thru a telemetry system and allow for live online evaluation of irrigation efficiency. A solar array is planned to be added to offset electricity use. The combination of the irrigation distribution upgrades, integrated soil moisture, weather, water use, and solar, will reduce overall ground water use and reduce GHG emissions.	$100,000.00	$44,588.69	Tehama
Vineyard Wildlife Ranch, LLC	The purpose of this project is to install a 28.9 kW solar PV system to power the existing 15 hp electric submersible pump and a 15 hp electric booster pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather and soil moisture sensors, and volumetric management with the proposed digital flow meter will also be implemented on the 100 acres of alfalfa and hay served by this pump to increase water savings. This project site is located in the 3-04.06 Valley - Paso Robles Area basin, which is critically over-drafted as of January 2016.	$98,237.25	$0.00	Monterey
James Efrid	The proposed project is a drip to flood conversion on approximately 77 acres of almond trees along with an new 50 HP booster pump, soil moisture sensors and a 173 kW solar system. The current energy use is electric and that will be converted so a significant portion of the energy used from the project will come from the proposed solar system.	$99,089.30	$300,527.37	Fresno
Mooney Makers	This project allows for the installation of two soil moisture monitoring units across 50 acres of almonds to track the movement and plant uptake of irrigation water to ensure that a minimum amount of water is used while maximizing yield. The existing 60hp well pump will be used to supply 100% groundwater, and the flow meter will connect to telemetry to monitor and record water applied.	$11,085.86	$0.00	Tulare
Almond Joy Inc	This project allows for the installation of soil moisture monitoring units across 2 ranches totaling 158 acres of almonds to track the movement and plant uptake of irrigation water to ensure that minimum amount of water is used while maximizing yield. Almond Joy North will use the existing 100 hp electric motor and Almond Joy South will use it's existing 100 hp electric motor to supply 100% groundwater. The existing flow meters will connect to telemetry to monitor and record water applied.	$22,171.72	$0.00	Tulare
Richland Hulling & Drying	The purpose of this project is to switch to solar and install moisture sensors to reduce greenhouse gas emissions and save irrigation water.	$99,939.85	$242,062.28	Sutter

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Richter AG Inc.	The purpose of this project is to improve the current irrigation system and expand cropping capabilities through the use of an improved sub-surface drip system. The current drip irrigation system is inefficient for row crops, and requires the use of a diesel engine to pump to both fields (100 acre and 37.4 acre fields). The current 120 HP engine/pump requires us to fill up diesel regularly and consequently the RPM can not be kept high enough on the 37.4 acre set to effectively filter the DPF system on the motor. In addition, remote field monitoring technology will be installed to improve water management in the farm. In addition, a new propane powered engine and improvements will be added to the existing pump to pressurize the system, and a functional flow meter will be added in order to measure water applied.	$63,056.38	$1,330.92	Colusa
John and Carmen Berns	The project proposes to install soil moisture sensors, cloud based data collection, a flow meter, weather station, and automatic shut off valves to increase water savings. To reduce greenhouse gas emission the project proposes to install a solar system to power well pumps.	$99,946.38	$24,197.62	Riverside
SloMart Ranches	SloMart Ranches proposes to : (1) Install new fanjet irrigation system on 6.68 acres that will be planted as soon as irrigation system is installed, this 7 acres were old citrus trees that were pulled out and the irrigation system was drag line sprinkler in which we pulled those out as well. (2) Upgrade the current system on 21.90 acres which has producing navels and valencia trees. The irrigation system on this is an old drag line sprinkler system that is ineficient for the trees water needs. The new system would replace the current irrigation with a new efficient system. (3) Replace the current filter/pump system. This would allow the system to pump and filter water much more efficiently and not leak.	$45,325.99	$3,000.00	Tulare
Ryan Colburn	The proposed project is to convert a formally flood irrigated walnut block to drip irrigated blueberries cultivated in pots for maximum control of water and nutrient application.	$99,998.96	$140,113.26	Kings
Creekside Farms Inc.	The purpose of this project is to convert 12 acres of soil grown blackberry production into a substrate growing system capable of growing raspberries and blackberries. The irrigation system is designed to operate at low pressure while using pressure compensating emitters. Drainage water from pots is collected and reclaimed for irrigation. Growing in the substrate media gives more control of fertility and water inputs allowing for a reduction in overall input use. Volumetric soil moisture probes are used to monitor substrate media and rain buckets are used to measure applied water and drainage water. Well water and drainage water volumes are measured with flow meters. Additionally, the purpose of this project is to install a 4.08 kW solar PV system to power the existing 20 hp electric vertical shaft turbine pump and a 40 hp electric booster pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather and soil moisture sensors, and volumetric management with the existing digital flow meter and well level sensor will also be implemented on the 12 acres of berries served by this pump to increase water savings. This project site is located in the 3-002.01 Pajaro Valley basin, which is critically over-drafted as of January 2016.	$99,738.41	$29,760.00	Santa Cruz

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HB Ag Investments	This project allows for the installation of a 202.5 kW DC solar system to power an existing 250 hp pump on 185 acres of almonds. The pump is currently powered by natural gas, but will be tied in to the new solar power system. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield, and a weather station will be installed to utilize ET based scheduling.	$100,000.00	$274,085.78	Kern
RBG Farming	This project allows for the installation of two solar units, each 142.56 kW DC, to power pumps on 265 acres of almonds. The existing 250 hp pump and 150 hp pump are both electric and pump ground water. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield, and a weather station will be installed to utilize ET based scheduling.	$100,000.00	$399,210.96	Kern
Sohan Samran and Mandeep Samran Trust	This project plans to replace/retrofit a low pump efficiency 200HP that has not been used because of its high cost of operation; a VFD will be installed on this pump as well. In addition, a real time IWM-3 irrigation monitoring solution including irrigation scheduling software will be installed which will help reduce water usage for irrigation and reduce greenhouse gas (GHG) emissions through reduced pumping. The Weather/ET, soil moisture, Leaf wetness health/ soil temperature kits and pressure sensors installed will be used to determine the appropriate interval between and duration of irrigation events considering the wide range of soils on this ranch. The sensor network will also alert to irrigation faults or broken drip lines reducing wasted water. The current property has two flow meters with PC interface and the plan is to also install 2 flow meters with PC interface to monitor the water used on each well This project consists of 530 planted acres, which are entering their second leaf and is reliant upon groundwater in the critically over-drafted Madera Basin.	$99,897.22	$112,350.82	Madera
Baughman Properties	This project allows for the installation of an 18.48 kW DC solar system to power an existing 100 hp pump on 32 acres of almonds. The pump is currently electric, but will be tied in to the new solar power system. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that minimum amount of water is used while maximizing yield. In addition, a weather station will be installed to utilize ET based scheduling.	$86,557.87	$0.00	Kern

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Arbor Vineyards	The proposed project for Vineyard 1 is to convert the 38 acres of flood irrigation to drip irrigation with a new 15hp variable frequency drive well pump and flow meter. The proposed project for Vineyard 2 is to convert the 40 acres of drip irrigation to use surface water instead of groundwater, and install a new 15hp centrifugal pump with a flow meter, filter station, and VFD. Vineyard 2 improvements include installing mainline pipe to tie into the existing drip system. Also, pump automations will be added to both vineyards, a total of three Sentek soil moisture probes, and one Davis Instruments weather station. The proposed changes to the existing on-farm irrigation system will save energy and water for Vineyard 1 through conversion from flood to drip irrigation and upgrading to a more efficient VFD pump. The proposed changes will save energy for Vineyard 2 because the surface water will be pumped from the river, as opposed from underground. The proposed changes for Vineyard 1 and Vineyard 2 will result in additional water savings by providing tools and information to better manage the total volume of water applied to the crops. The reduced pumping and use of high-efficiency pumps will reduce greenhouse gases.	$99,909.05	$22,300.00	San Joaquin
Peterson Freed Farms, LLC	This project allows for the installation of a 13.8 kW DC solar system to power an existing 25 hp pump on 30 acres of blueberries. The pump is currently electric and will be tied in to the new solar power system. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure minimum use of water while maximizing yield, and a weather station will be installed to utilize ET based scheduling. Pump control technology will also be used for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints.	$89,990.26	$6,300.00	Tulare
Sherfield Ranches	This project allows for the conversion from flood to fan jets on 38 acres of citrus. The system will include new filters and a flow meter while utilizing the 25 hp electric pump that is already in place. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure minimum use of water while maximizing yield, and a weather station will be installed to utilize ET based irrigation scheduling. A solution machine will also be used to amend water and soil chemistry to reduce nonbeneficial water loss. Pump control technology will also be used for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints	$100,000.00	$27,153.73	Tulare
Ikeda Bros	The purpose of this project is to install a 30.6 kW solar PV system to power the existing 30 hp electric submersible pump and 40 hp electric booster pump. This will reduce the amount of GHG emissions associated with the energy required for pumping. In addition, weather and soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 102 acres of row crops served by this pump to increase water savings. This project site is located in the 3-012 Santa Maria Valley basin, which is not critically over-drafted as of January 2016.	$99,999.01	$9,200.00	San Luis Obispo
Joan Avedian	The proposed project adds a drip system, new pressure pump, solar PV array, and IWM Level 3 management (flow meter, 2 soil moisture stations, and advanced volumetric management). Current situation is a flood irrigated, 38.1 acre vineyard. All irrigation water is pumped from the ground with a 30hp well pump. There is no flow meter or soil moisture monitoring.	$99,989.20	$24,199.30	Fresno

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Jones Farms	This project will upgrade Level "0" IWM practices to Level "3". The current pump will be retrofitted to improve overall pumping efficiency, which will also produce additional GHG savings. The new plantings will significantly increase the yields per acre (crop per drop). Groundwater pumping will be reduced. Jobs and revenue will be additional benefits to a severely disadvantaged community. Inefficient flood irrigated 17 acre vineyard are upgraded to a high yielding, drip irrigated vineyard. Defective 19 acre almond orchard with inefficient sprinklers were replanted with lower pressure drip irrigation system.	$86,835.86	$6,347.07	Fresno
Legacy Family Farms LLC	This project allows for the installation of soil moisture monitoring equipment, a VFD, and pump control on 17 acres of citrus. The citrus fan jet system will be retrofitted to a double line drip system and irrigated by a 7.5 hp electric pump. Soil moisture monitoring units will be installed to track the movement and plant uptake of irrigation water to ensure that minimum water is used while maximizing yield, and a weather station will be installed to utilize ET based scheduling. Pump control technology will also be used for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints. A solution machine will also be used to amend water and soil chemistry to reduce nonbeneficial water loss.	$82,158.98	$0.00	Fresno
William Pruitt	The proposed project includes: (1) installation of a 35.8 AC rated solar system to offset the current and future electrical usage of an existing 50 HP irrigation booster pump, (2) installation of a 50 HP variable frequency drive electric panel to reduce the irrigation system operating pressure and electrical usage, (3) installation of a new 50 HP premium efficient US motor on an existing turbine irrigation booster pump, (4) installation of 3 Sentek soil moisture probes with remote access to help schedule irrigations, 3 inline pressure sensors with remote access to verify irrigation events occurred at the correct time and duration, 1 Puresense field weather station with remote access to determine field weather conditions, and a Seametrics magnetic flowmeter to record the amount of water applied to the field. The project also includes the installation of an electrical timer that will be used to automatically turn off the irrigation booster pump and fertilizer pump after an irrigation event has occurred for a selected amount of time.	$100,000.00	$59,791.00	Merced
Marilyn Vierra	This project proposes to take advantage of Hortau irrigation management, scheduling and custom automation to increase efficiencies and reduce water, energy, nutrient and pesticide usage. Also with the correct irrigation scheduling and automation the runoff and erosion problems can be mitigated. In addition, a new, accurate seametrics flowmeter will be added. In addition, irrigation valves will be upgraded as part of matching funds. The ranch is located in Riverdale, CA. a disadvantaged community. Currently ET is being used to guess the irrigation scheduling which is not very efficient.	$100,000.00	$10,449.00	Fresno
Kencarol Inc	This project allows for the installation of soil moisture monitoring units and weather stations across 199 acres of citrus to track the movement and plant uptake of irrigation water to ensure minimum water use while maximizing yield. Four existing pumps, one at each ranch, will be used to supply 100% groundwater to the crop. The existing pumps are 5 hp, 15 hp, 20 hp, and 30 hp and they are all electric.	$69,202.44	$0.00	Tulare

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CitriCare	This project allows for the installation of soil moisture monitoring units and weather stations across 161 acres of citrus to track the movement and plant uptake of irrigation water to ensure that minimum amount of water is used while maximizing yield. Four existing pumps, one at each ranch, will be used to supply 100% groundwater to the crop. The existing pumps are 10 hp, 25 hp, 30 hp, and 30 hp and they are all electric.	$61,861.24	$0.00	Tulare
Michael H Nielsen	This project allows for the installation of a weather station, pump control, new drip tubing, and a 22.4 kW solar system on 26 acres of citrus. The citrus is irrigated with fan jet by a 40 hp electric pump that will be hooked to the new solar. A weather station will be installed to utilize ET based scheduling. Pump control technology will also be used for remote start/stop of the pump to make sure that run times are precise and pumps don't run long due to logistical constraints. New drip hose will be installed as the primary irrigation method to reduce water loss due to evaporation from the fan jets.	$100,000.00	$7,244.38	Fresno
Triple E Livestock and Land Co	This project allows for the installation of soil moisture monitoring equipment, a silo and a solution machine on 115 acres of almonds spread over two ranches. The ranches are both drip irrigated, with 176 ranch being fed by a 110 hp diesel pump and Visalia ranch being fed by a 15 hp electric pump. Soil moisture monitoring units will track the movement and plant uptake of irrigation water, while a silo and solution machine will amend water and soil chemistry to reduce non-beneficial water loss.	$100,000.00	$5,471.08	Tulare
Sam and Suzanne Etchegaray	This project allows for the installation of soil moisture monitoring equipment, a silo and a solution machine on 233 acres of table grapes. The ranch is drip irrigated and serviced by two diesel pumps, one at 150 hp and one at 450 hp. Soil moisture monitoring units will track the movement and plant uptake of irrigation water, while two silos and solution machines will amend water and soil chemistry to reduce non-beneficial water loss.	$100,000.00	$2,650.77	Tulare
Singh Farming Company	The purpose of this project is to install plant, soil, and weather monitoring sensors as well as flow monitoring. It will all be automated allowing to schedule irrigation events precisely when needed reducing pumping and unnecessary irrigation events. Valves will be added to go from 2 to 4 sets that will allow to schedule irrigation based on the different ET of grapes vs almonds, different water needs of young vs. older almonds and plant stress but also soil moisture percolation differences, which are large within each block. It will also mitigate nutrient leaching and loss, reduce humidity in the orchard causing less diseases, as well as allow the trees to grow almost perfectly because they wont be stressing from too little water or suffocating	$72,055.90	$39,214.70	Madera
Living Waters Dairy	This project proposes to convert a 37.2 acre flood irrigated walnut field to under tree sprinklers. A 15.6 acre flood irrigated corn field is replanted to almonds, with a dual line drip system. The pump is re-bowled to improve efficiency and generate the correct pressure and flow for the new systems. IWM components of flow meter and soil moisture monitoring are installed. Advanced, Level 3 IWM management will be practiced in order to save additional water and GHG's.	$99,994.98	$12,048.30	Fresno

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Nichols Farms, Inc	The purpose of this project is to automate the irrigation system on 220 acres of bearing pistachios in Nichols Farms. The pumps, wells, and valves will be retrofitted with Hotspot Ag, Inc. hardware. All three wells will be retrofitted for remote start/stop, flow and energy logging, and pressure monitoring. One of the wells will be equipped with a standing and pumping water level sensor to calculate pumping efficiency. The reservoir lift pump will be equipped with remote start/stop equipment and the filter station will be equipped with top and bottom manifold pressure transducers and monitor flow. The 36 3" brass valves that were installed with the drip system in 2001 need to be retrofitted. In addition, the valves will be remotely monitored. Six Sentek drill and drop soil moisture sensors will be installed to monitor soil moisture. The downstream valve pressure transducers will be utilized to verify the ET forecast or irrigation plan was met. The soil moisture sensors will be utilized in the software to provide feedback to the ET irrigation plan. The combination of hardware retrofits and software will allow to optimize energy and water management by measuring the soil and plant continuum, which will ultimately help conserve water and energy.	$93,790.66	$5,200.00	Tulare
M C Fagundes Ranch	This project aims to dramatically reduce the ranch's energy consumption by replacing a 25+ year old energy inefficient electric motor with a high efficiency electric motor and VFD on the ranch's 160 acres of Pistachios. This project will also replace the pump with new high efficiency pump and parts. The new electric motor is designed to be more energy efficient than the old pump, while the VFD reduces power consumption which saves energy and allows the drip irrigation system to run at peak efficiency. In addition, the project will reduce water consumption by installing a "Weather Station" in order to verify the local weather when scheduling irrigation to avoid unnecessary applications. The weather station will be capable of monitoring solar radiation, air temperature, humidity, rainfall, and wind. This device will provide a precise estimate of the daily ET, allowing us to use ET-based scheduling and keep irrigation to the minimum requirement to maintain a healthy crop. The entire 160 acres are already drip-irrigated, and flow meters are installed throughout the ranch's irrigation system. This ensures the proper amount of water is applied and can be monitored throughout the season.	$100,000.00	$41,010.01	Tulare
Trimmer Farm Management	The proposed project includes two initiatives: Firstly, a 28.6ac flood irrigated almond orchard is replanted to citrus with micro-irrigation. Two new pumps (a 20hp turbine pump for surface water pressurization, and a 40hp pressurized well pump) deliver water to the system. Soil moisture monitoring, flow measurement, and IWM Level 3 management will occur. Secondly, 169kw of solar and IWM Level 3 management will be added to 439.9ac (this acreage includes the almond to citrus conversion listed above). IWM advancement involves steps of one or two levels depending on the individual field.	$99,999.08	$391,389.23	Fresno

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Alfredo Diaz	The project will upgrade existing irrigation infrastructure at an existing, 28-acre almond orchard The project proposes to upgrade an existing, antiquated and low efficiency 15-HP, electric drive groundwater pump with a new, 80%+ efficient pump system with a new flow meter. A proposed 14-kW solar array will provide electricity to the pump. Water from the pump will be delivered along existing pipelines to updated, higher efficiency Nelson R10 sprinklers, which will replace existing and malfunctioning Rainbird metal impact sprinklers currently in use on site. Also, new soil moisture and temperature measurements systems will be installed, which will help to greatly improve plant water stress estimates and, in combination with a proposed on-site weather station, will enable accurate and precise irrigation scheduling. The onsite weather station will help reduce and automate water application used to protect the trees from freezing after pollination has occurred.	$87,296.66	$3,936.90	Glenn
Mountain Ranch Farms, LLC	The proposed project incldues conversion of solid set sprinklers to inline drip along with the installation of sensors and automation on 160.88 acres near Bakersfield, Ca. The project will significantly reduce the amount of water used and green house gases emitted through an improvement in irrigation efficiency and online irrigation management.	$99,918.00	$114,273.93	Kern
Gurtaj & Sukhraj Samran	The proposed project will fix one well pump with low pump efficiency. Also, a real time IWM-3 irrigation monitoring solution including irrigation scheduling software will be installed, which will help reduce water usage for irrigation and reduce greenhouse gas (GHG) emissions through reduced pumping. The Weather/ET, soil moisture, Leaf wetness health/ soil temp kits and pressure sensors installed will be used to determine the appropriate interval between and duration of irrigation events taking into account the wide range of soils on this ranch. The sensor network will also alert to irrigation faults or broken drip lines reducing wasted water. Also, 2 flow meters will be installed with PC interface to monitor the water used. These cost-effective technologies will help take better decisions about how to reduce irrigation while keeping yields. This project is reliant upon groundwater in the critically over-drafted Madera Basin	$99,510.00	$61,824.89	Madera
Grant Garcia Farms	This project proposes to install a new system to be able to monitor soil moisture through sensors with electronic data output and flow meters to ensure efficient irrigation scheduling. This will provide more accurate irrigation as well as maintaining electronic records that will allow to review past irrigation and make any changes for the up coming seasons. These will be the first units that will be installed with future expansions including all of planted acres. Also, a solar system will be installed, which will allow to reduce Green House Emissions created by water pumping needs.	$99,997.34	$176,462.61	Fresno
Sherwood Equipment Inc.	The purpose of this project is to convert from Flood to micro-irrigation system. Also, an intelligent irrigation controller will be used that includes: soil moisture probes and a weather station to schedule irrigation; pressure sensors to monitor the efficiency of the filter station and flow meter to track water usage. In addition, the pumping plant will be converted from diesel to electric. Solar panels will be installed to offset the electricity use and incorporate a VFD so that the system is used as efficiently as possible.	$100,000.00	$150,972.63	Fresno

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Oskam Farms Inc	This project allows for the conversion of 80 acres of stone fruit from flood to drip by installing a new basin, filter station, and drip irrigation system. Adding the basin will allow to utilize more surface water and reduce the use of well pumps. A 50 hp electric pump and a 75 hp electric pump will deliver water, and a flow meter will be installed to record water use. A soil moisture monitoring unit will be installed to track the movement and plant uptake of irrigation water to ensure that we use a minimal amount of water while maximizing yield.	$100,000.00	$213,516.11	Tulare
Stueve's Certified Organic Dairy	This project proposes to bring 3 phase power from Surprise Electric 17 miles to Dodge Ranch. Also, 2000 hp worth of Diesel motors will be removed and replaced with premium efficiency electric turbine motors to save diesel fuel costs and eliminate dependency on fossil fuels. In addition, VFD's will be installed on electric turbines and high efficiency type water heads on pivots vs spray heads to save more water from evaporation.	$99,250.00	$1,100,000.00	Lassen
Santokh S. Toor and Arpinder K. Toor 2011 Living Trust	This proposed project will install FarmX IWM-3 soil sensors, plant sensors, Weather station with ET and use the sensor data for scheduling irrigation. Also, flow meters will be installed in addition to VFD's on well pumps to save pumping energy. To precisely schedule, FarmX field and flow monitoring systems will be utilized, which will allow to closely monitor real time water usage on the phones and computers. It will all be automated allowing to schedule irrigation events precisely when needed, which reduces pumping and unnecessary irrigation events. It will also mitigate nitrate leaching and loss. Lastly, FarmX's NDWI and NDVI images will be used to determine areas of the field that are over watered.	$99,908.42	$146,054.02	Visalia