

California Department of Food and Agriculture
2016 round 2 State Water Efficiency and Enhancement Program
Projects Selected for an Award of Funds
Updated 11/7/19

Agriculture Organization	Project Description	Funds Requested	Matching Funds	County
3D Farms	This project proposes to convert a furrow irrigated corn field to a drip irrigated tomato field in an area with no electricity. The project components will include: replace a 61 HP diesel pump with a 60 HP propane pump; replace furrow irrigation with sub-surface drip irrigation; install solar powered Smart Stations with soil water tension monitors and electronic data output. ET will be monitored daily via emails from the Western Weather system.	\$148,642	\$51,601	Sutter
Al Pie Del Cielo	This project proposes to install a solar energy system to power the current submersible pumps that irrigate 15 acres of wine grapes and olives. A flowmeter that receives real-time telemetry data collection will be installed that will receive input from both a weather station and soil moisture sensors. Well level sensors and volumetric management will be installed.	\$112,612	\$12,500	San Luis Obispo
Almendras del Sol	This project proposes to implement water management practices. Hortau soil moisture sensors and weather stations will be installed and will report in real-time to facilitate irrigation scheduling.	\$80,529	\$5,292	Colusa
Anderson Farms	This project proposes to convert from flood irrigation to drip irrigation in a 62.5 acre walnut orchard. Current pumps will be upgraded featuring efficient VFD. Soil moisture systems will be installed.	\$119,518	\$47,800	Butte
Andy Muxlow Farms	This project proposes to convert from flood irrigation to drip irrigation. Flowmeters that receive real-time telemetry data collection will be installed that will receive data from both a weather station and soil moisture sensors. A solar energy system will be installed to provide a renewable energy source for the project.	\$200,000	\$85,380	Tulare
Anthony Vineyards Inc.	This project proposes to install flowmeters and irrigation monitoring stations including soil tensiometers and a weather station over 545 acres of table grapes.	\$184,789	\$39,900	Kern
B & B Arboleda Inc.	This project proposes to install soil moisture sensors, flow meters, and pressure sensors before and after the pump filters. Real-time data collected from this equipment will facilitate irrigation scheduling and pump monitoring.	\$84,200	\$6,086	Butte
B & R Almonds Inc.	This project proposes to install an advanced irrigation management system, weather station, flow meters with flow meter monitoring, and an upgraded irrigation system- moving from flood to drip.	\$160,614	\$90,300	Kern
B&R Tevelde	This project proposes to convert from flood/furrow irrigation to micro-jet irrigation. Components include solar panels, a VFD on the booster pump to reduce energy use, variable rate chemical injection pump to prevent over fertilizing, soil moisture probes to acutely manage irrigation crop ET, flow meter and cloud data management to monitor and verify use, and automated valve control to eliminate unnecessary driving and extra GHG emissions. A tail water return system will also be put in place to capture and reuse any runoff from the fields.	\$200,000	\$221,104	Tulare
Bai Chang	This project proposes to convert from flood to drip irrigation. Current pumps will be upgraded with efficient VFD.	\$39,031	\$5,050	Fresno
Balbir Sohal	This project proposes to implement water management practices on 154 acres. Soil moisture sensors will be installed to monitor irrigation efficiency with telemetry. Pumps efficiency will be monitored by adding a flow meters to the discharges, and pressure sensors before and after the filters. A solar energy system will be installed to provide a renewable energy source for the project.	\$151,246	\$9,197	Sutter, Yuba
Bartlet Farms LLC	This project proposes to implement water management practices on 16.6 acres. A weather station, soil moisture sensors, pressure sensors and flow meters will be installed and will provide data remotely to monitor pumps and irrigation.	\$89,850	\$1,721	Butte
Benel Farms	The project proposes to replace flood irrigation with low water use drip irrigation with a variable frequency drive, solar panels and irrigation automation over 40 acres of peaches.	\$199,677	\$24,175	Fresno
Bettencourt and Marson Dairy	This project proposes to dramatically improve water use efficiency on sandy soils by cutting the run length of a border check system in half by installing new pipeline.	\$199,642	\$87,364	Merced
Blackburn Walnut Farms	This project proposes to implement water management practices on 49 acres. Soil moisture sensors will be installed to monitor irrigation efficiency with telemetry. Pumps efficiency will be monitored by adding a flow meters to the discharges, and pressure sensors before and after the filter.	\$35,370	\$5,897	Tehama
Blair Ranch LLC	This project proposes to install a weather monitoring system and soil moisture monitoring stations with tensiometers and data recording. The project also proposes to install a sulfurous generator on site to lower the water pH level from 8.1 to 6.5 making applied nutrients more available. Sulfurous generators also improve water penetration therefore reducing pumping times and requiring less water to irrigate.	\$110,403	\$59,400	Riverside
Bobby Yamamoto Farms, Inc.	This project proposes to installing a 49 kW solar array that will be added to an existing 35kW array, convert a 125 Horsepower tier 2 diesel motor to a 200 horsepower high efficiency 460 Volt electric motor controlled with a variable frequency drive programmed to run based on farm demand and water level of well, and convert 33 acres of high pressure/High flow rate sprinklers to a low pressure drip system.	\$186,374	\$50,000	Stanislaus
Bowles Farming Company, Inc.	This project proposes to remove an existing booster pump powered by an 80 hp John Deere 4045TF280B diesel engine, and to install a 60 hp electric motor with VFD control. In addition, weather, volumetric soil and soil-tension sensors will be used for ET based volumetric management informed by soil tension data. This information will be combined with VFD/valve automation to deliver soil specific variable rate irrigation. This project also monitors canal level, flow meters, injection pumps, and PH/EC levels to ensure the precise amount of inputs and water are applied on 112 acres of pistachios.	\$200,000	\$12,713	Merced
Bransford Farms	This project proposes to implement irrigation practices by using new sensor based technology to refine scheduling of irrigation. Soil moisture probes will be installed and evapotranspiration based scheduling will be incorporated on 108 acres of prunes.	\$35,348	\$657	Colusa
Britz Fertilizers, Inc.	This project proposes to replace a flood irrigation system with a fan-jet style micro-irrigation system, an irrigation management system, and variable frequency drive controllers on the pump motors.	\$199,662	\$144,771	Tulare
C and C Ranches	This project proposes to implement irrigation water management on 22.9 acres by adding a soil moisture station to monitor irrigation efficiency and monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$25,440	\$2,651	Butte

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Cagliero Ranches Inc.	The project proposes to install a 45.4kW solar PV system to power the existing 60 hp electric vertical shaft turbine pump and a 30 hp electric booster pump. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 120.3 acres of alfalfa and hay served by this pump to increase water savings.	\$200,000	\$24,295	Monterey
Capital Agricultural Property Services, Inc.	This project proposes to install a 45.4 kW DC solar PV system to power the existing 250 hp electric vertical shaft turbine pump. In addition, weather & soil moisture sensors, evapotranspiration (ET) sensors and volumetric management with the existing digital flow meter and proposed well level sensor will also be implemented on the 92.72 acres of wine grapes served by this pump to increase water savings.	\$200,000	\$18,898	San Luis Obispo
Cardenas, Jose	This project proposes several water conservation and energy efficiency upgrades on a 20 acre family farm. Measures include rehabilitation of an older well, installation of pressure bowls and a premium efficiency pump motor equipped with a VFD, conversion of 19 planted acres from flood irrigation to low pressure drip and installation of a flow meter and telemetry system which will result in more accurate irrigation scheduling and efficient use of water resources.	\$76,125	\$54,320	Madera
Center Line Farms	The proposed project will change flood irrigation to drip irrigation on approximately 117 acres of walnuts. The proposed irrigation system will install micro spray irrigation, with a variable frequency drive, and soil moisture sensors.	\$199,252	\$16,475	Tulare
Chafong Lee	In this proposed project a specialty vegetable operation producing bean green, corns, tomato, eggplant, crucifers, pepper, and squash will convert from surface to drip irrigation, will increase pump efficiency and install a variable frequency drive.	\$94,885	\$7,999	Fresno
Chandler Farms LP	This project proposes to upgrade an existing direct drive pump to a Variable Frequency Drive pump and install three soil moisture monitors.	\$14,478	\$4,825	Fresno
Chia Vang Her	In this proposed project a specialty vegetable operation producing Asian yard long beans, tomato, lemongrass, and Thai chili peppers will convert from flood to drip irrigation, increase pump efficiency and install a variable frequency drive.	\$102,314	\$10,699	Fresno
Chris Vandborg Farms	The project proposes to convert 80 acres from the flood irrigation of alfalfa, corn, onions, and carrots to micro irrigation of almonds. It includes installing soil moisture monitoring units throughout the fields to improve irrigation scheduling and efficiency.	\$151,489	\$22,173	Kern
Circle D Farms Inc.	This project proposes to implement water management practices on 324 acres. A weather station, soil moisture sensors, flow meter, and pressure sensors will be installed. The current diesel pump will be replaced by an electric pump with VFD. A solar energy system will be installed to provide a renewable energy source for the project.	\$200,000	\$43,996	Yolo
CJJ Farming	This project proposes to implement irrigation management practices on 73 acres by adding soil moisture stations to monitor irrigation efficiency, to monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter. The project includes the installation of a VFD to the pump.	\$31,515	\$3,986	Santa Barbara
Clark Bros. Farming	This project proposes to convert current diesel and direct drive pumps to electrical with VFD.	\$123,762	\$8,000	Fresno
D and F Orchards	This project proposes to implement irrigation management practices on 100 acres by installing multiple soil moisture stations to monitor irrigation efficiency. The project will also monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$192,783	\$2,010	Glenn
DANELL BROTHERS FARMS	This project proposes to install PVC piping to eliminate current ditch usage. A VFD will be installed at the well.	\$38,060	\$0	Kings
Daniel Myers	This project proposes to implement irrigation management practices on 390 acres by adding soil moisture stations monitor irrigation efficiency and monitoring pump efficiency by adding flow meters to the discharge, and pressure sensors before and after the filters.	\$107,641	\$11,345	Colusa
David Corriea	This project proposes to implement irrigation management practices on 40 acres by adding soil moisture stations to monitor irrigation efficiency and monitoring pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter. The project includes the conversion of a diesel pump to electric that will be powered by a 13.6 kw photovoltaic system.	\$148,201	\$1,319	Glenn
Davis Diversified Farms, LP	This project proposes to convert 32 acres from flood to drip irrigation, install a variable frequency drive (VFD) on an existing 40 hp pump, construct a 107 kW DC solar power system which will produce 100% of the groundwater pumping power needs of 177.88 acres, and install a telemetry system including an on farm weather station, soil moisture sensors and a communication node.	\$144,839	\$144,839	Madera
DENKEN	This project proposes to replace a micro sprinkler irrigation system with a lower pressure and lower volume micro drip system on its 184 acres of citrus, install a field located, PLC based, precision irrigation system with moisture sensing and weather station. Additionally an existing diesel engine driving a water pump will be replaced by an electric motor. New VFDs will be installed on the two well pumps applicable to this project.	\$139,445	\$111,183	Fresno
Desert Fresh Inc.	This project proposes to install a weather station and two soil monitoring stations with soil tensiometers. In addition a new filter will be installed to enhance the efficiency of the existing drip system.	\$52,786	\$2,268	Riverside
Dino Boneso Vineyards	This project proposes to install a solar powered well system and sensors to measure evapotranspiration.	\$66,034	\$2,250	San Luis Obispo
DLM Partners	The proposed project will replace flood irrigation with a Fan-Jet style micro-irrigation system, install an irrigation management system, and utilize variable frequency drive controllers on the pump motors.	\$198,842	\$172,739	Tulare
Don Holder	This project proposes to convert from flood irrigation to a dual line drip irrigation system, convert a 25hp pump operating at 29% efficiency with a variable frequency drive and incorporate soil based moisture based sensors for irrigation scheduling.	\$64,850	\$14,700	Fresno
Done Again' Farms	This project proposes to add irrigation scheduling technology including weather and soil sensors.	\$22,583	\$410	Colusa
DOUG & JULIE FREITAS FARM	This project proposes to convert from flood to drip irrigation. Additionally, a new pumping plant will be equipped with a VFD and flow meter. Real time remote field monitoring sensors will be installed with a weather station to allow for IWM level 3 to be achieved.	\$200,000	\$24,601	Kings

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DP Farms	This project proposes to install a 79.5 KW AC solar system that will produce enough electricity to offset the energy use of a 100 horsepower electric booster pump and install new drip hose to increase irrigation system uniformity. Additionally the project will include a soil moisture monitoring system with a weather station that will be used to help schedule the frequency and duration of irrigation events. A 100 HP variable frequency drive electric panel will be installed on the irrigation system booster pump to ensure the irrigation system operates at the designed pressure and conserves energy.	\$200,000	\$207,908	Merced
Duarte Family 1998 Trust	This project proposes to install real time remote soil monitoring sensors, flow meters, weather stations with evapotranspiration (ET) and plant health sensing in a 40 acre almond field which will help optimize water usage for irrigation and reduce greenhouse gas (GHG) emissions through reduced pumping.	\$26,183	\$0	Stanislaus
Dustin Fleming	This project proposes to switch from flood irrigation to solid set sprinkler system and install soil moisture sensors and variable frequency drive.	\$82,815	\$105,005	Sutter
E. W. Merritt Farms	This project proposes to replace flood irrigation system on 442 acres with micro drip system consisting of 20' x 16' spacing double row drip system, buried PVC piping, P.C. dripper at 24" spacing, mainline, submain, manifold piping, sub-unit control valves, isolation valves, relief valves, eight tank sand media filter station with auto flush, and reservoir. Project also includes precision irrigation automation equipment.	\$199,997	\$481,100	Tulare
East Camp Farming Company	This project proposes to install 9 moisture monitoring stations and 1 weather station.	\$112,751	\$6,192	Colusa
Eldon Thiesen Farms	This project proposes to install soil moisture monitoring equipment to improve the efficiency and timing of irrigations and reduce emissions due to pumping. Weather sensors will be included to aid in ET-based scheduling to ensure that the local weather is taken into account when scheduling irrigations to avoid unnecessary applications.	\$38,097	\$0	Fresno
Erickson Farms Partnership	The project proposes to install a VFD, solar system, and irrigation system automation with sensors, weather station and wireless mesh network on approximately 96 acres of almonds and grapes.	\$192,987	\$84,697	Madera
Fetzer Vineyards	This project proposes to implement a real-time advanced irrigation management system using soil moisture sensors, ET and weather sensors, and flow and pressure indicators on 172 acres of wine grapes. A VFD pump control will be installed for more efficient irrigation across the widely variable small irrigation blocks.	\$124,117	\$6,865	Monterey
Freitas Farms One	This project proposes to convert flood irrigation to drip tape, install a new booster pump and variable frequency drive, moisture sensors and a weather station on 160 acres of tomatoes.	\$199,942	\$811,451	Fresno
G & H Farms, LLC	This project proposes to install a 42.8 kW DC solar PV system to power the existing 50 hp electric vertical shaft turbine pump and a 60 hp electric booster pump. In addition, weather & soil moisture sensors, evapotranspiration (ET) sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 126.19 acres of lettuce served by this pump to increase water savings.	\$200,000	\$34,669	Monterey
G.C.M Farms	This project proposes to convert 244 acres of farmland from flood irrigation to drip irrigation. Irrigation management will be increased using an Observant system with a Davis weather station allowing for irrigation to be based on evapotranspiration and prevent unnecessary irrigations. Additionally, an existing diesel pumping plant will be converted to an electric pumping plant with a VFD.	\$200,000	\$257,952	Kings
G4	This project proposes to replace a micro sprinkler irrigation system with a lower operating pressure and lower volume micro drip irrigation system on its 160 acre property containing citrus trees. Additionally the project will install a field located, PLC based, precision irrigation system with soil moisture sensing and weather station. A new VFD will be installed.	\$79,780	\$74,463	Kern
GEM Farms	This project proposes to integrate solar on the pumping station to limit current electrical usage, and refine irrigation practices with the addition of a flow meter and weather station on 17 acres of irrigated almonds.	\$53,385	\$2,900	Colusa
Gemstone Properties Inc.	This project proposes to include irrigation management practices on 148 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$124,467	\$5,744	Butte
Gizdich Ranch	This project proposes to convert 16 acres of apples from hand moved sprinkler line to drip irrigation. A VFD (pump control) will be added to the existing well to match the reduced pumping requirements of the 18 acre low pressure system. Six soil tension field monitoring stations will be installed in the most representative area of the ranch to monitor crop variety and soil type. One weather station will be installed to calculate Evapotranspiration (ET).	\$90,980	\$7,988	Santa Cruz
Glenda Babbitt	This project proposes implementing irrigation management practices on 20 acres by adding a soil moisture station to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$106,323	\$7,487	Tehama
Goodman Ranch	The project proposes to improve Irrigation Water Management Level from 0 to level 3 for 401 acres of almonds. There will be six soil moisture stations installed that each will include an Enviro-Pro soil moisture sensor, PA-1 pressure sensor, and an Adcon radio unit. The water sources will all have pump monitoring stations which include a McCrometer Flow meter, 2 pressure sensors (before and after filter), and an Adcon radio unit. This project will include a full ETO station and a well transducer for monitoring water levels. The pump will have a certified organic acid injection burner equipped.	\$107,511	\$10,617	Colusa
Grapeman Exitus Vineyards LP	This project proposes to install soil moisture monitoring equipment to improve the efficiency and timing of irrigations and reduce emissions due to pumping. Weather sensors will be included to aid in ET-based scheduling to ensure that the local weather is taken into account when scheduling irrigations to avoid unnecessary applications.	\$15,870	\$0	Kern

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Grapeman Maricopa 166 Ranch LP	This project proposes to install soil moisture monitoring equipment to improve the efficiency and timing of irrigations and reduce emissions due to pumping. Weather sensors will be included to aid in ET-based scheduling to ensure that the local weather is taken into account when scheduling irrigations to avoid unnecessary applications. A silo and soil solution machine will also be added to improve the efficiency of gypsum applications to improve water and soil chemistry and increase water penetration.	\$68,272	\$0	Kern
Grapeman Maricopa Ranch LP	This project proposes to install soil moisture monitoring equipment to improve the efficiency and timing of irrigations and reduce emissions due to pumping. Weather sensors will be included to aid in ET-based scheduling to ensure that the local weather is taken into account when scheduling irrigations to avoid unnecessary applications.	\$26,381	\$0	Kern
Grapeman MH Ranch LP	This project proposes to install soil moisture monitoring equipment to improve the efficiency and timing of irrigations and reduce emissions due to pumping. Weather sensors will be included to aid in ET-based scheduling to ensure that the local weather is taken into account when scheduling irrigations to avoid unnecessary applications.	\$21,126	\$0	Kern
Groveland Projects	This project proposes to replace gasoline generator driven electric deep well pump with a PV solar powered pump with 3 days above ground water storage. Replace flood irrigation in orchard with trickle. Install smart irrigation controller, featuring ET and soil moisture sensors and install flow meters.	\$29,628	\$6,050	Tuolumne
Hacker Cattle Corp	This project proposes to install low pressure, double line drip to replace sprinklers in 26.3 acres of almonds. The 15hp booster pump will have a VFD to allow low pressure operation, and also allow adequate flow for filter back flushing. The existing sand tanks will be upgraded with a custom design low pressure system. The 10hp turbine will be upgraded to a 20hp VFD well pump. The 7.5hp submersible well pump will no longer be used. A flow meter and 2 soil moisture stations will be added. Additional set valves will be placed in the field to create a north/south block for early season irrigation timing.	\$61,235	\$15,296	Fresno
Harnish - Five Points, Inc.	This project proposes to convert two direct drive electrical powered deep wells to variable frequency drive units.	\$67,431	\$8,000	Fresno
Henderson Farms Inc.	This project proposes to install a weather station that will include 5 weather variables (Solar radiation, humidity, air temperature, leaf surface wetness and wind). Daily reference evapotranspiration or (ETo) can be measured, precisely within the crop canopy every day. An electronic flow meter will be installed on the pump as well, for tracking applied water, and flow rates (GPM, total acre feet). Along with ET determining exact crop needs. Capacitance-type soil moisture sensors will also be installed in the orchard to ensure irrigation events are being maximized and not wasted by over watering the root zone.	\$53,443	\$1,033	Colusa
Hermosa Tierra Inc.	This project proposes to install and implement an advanced irrigation management system with soil tensiometers, flow meters, VFD and a solar project.	\$200,000	\$92,711	Tulare
Hmong Alliance Church of Fresno	This project proposes to convert from flood to drip irrigation, increase pump efficiency and install a variable frequency drive.	\$71,700	\$17,035	Fresno
Hudson Greer	This project proposes to include irrigation management practices on 153 acres by adding soil moisture stations to monitor irrigation efficiency and also monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter. Additionally, the project will convert a solid set sprinkler system to a micro jet system.	\$200,000	\$215,459	Glenn
Huerta Family Farms Inc.	This project proposes to convert flood irrigated farm land to drip irrigation. A solar system will provide renewable energy for irrigation. Irrigation water management will be implemented through the use of moisture sensors and a weather station. Flowmeters will be installed with the system to measure water use and be documented through Rain Bird IWM software. New energy efficient water pumping equipment will replace the existing.	\$195,012	\$63,355	Fresno
Ideal Walnut	This project proposes to implement irrigation management practices on 240 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally the project will monitor pump efficiency by adding a flow meters to the discharges, and pressure sensors before and after the filters.	\$100,104	\$13,275	Sutter
Indeck - Paso Robles, LLC	This project proposes to install a 32.1 kW DC solar PV system to power the existing 50 hp electric booster pump. In addition, weather & soil moisture sensors, evapotranspiration (ET) sensors and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 133.74 acres of wine grapes served by this pump to increase water savings.	\$197,000	\$15,500	San Luis Obispo
Iyer Farms	This project proposes the conversion of (3) diesel motors to an electric motors that are more efficient, installation of drip and micro-sprinklers to replace surface irrigation. In addition the project will add 3 pumping stations, they will include: 3 flow meters, 3 VFD's, 3 sets of media filters, 3 fertilizer injectors. The project also includes the installation of 5 soil tension stations (one per irrigation set) and weather station.	\$200,000	\$291,345	Merced
Jasper Ranch Partnership	This project proposes 4 additions to the existing irrigation system: 1) replacement of flood irrigation with micro-sprinklers on 34 acres of existing almonds, 2) installation of 3 soil monitoring stations, 3) installation of a electric VFD booster pump, filters, and a flow meter to allow water from the water district to be used to run the micro sprinklers on a total of 142 acres, replacing the use of ground water (and 2 diesel motors), and 4) installation of a pipe that ties all the irrigation systems together and allow the VFD booster pump to irrigate site 11 (40.1 acres of prunes). It will also eventually allow the installation of a drip system to replace flood irrigation on 66 acres.	\$180,187	\$6,306	Glenn
Jeff Banducci Farms, INC	This project proposes to convert from flood to drip irrigation on 72 acres of alfalfa using sub-surface tape drip system. Install a VFD panel to reduce pumping to meet demand and install moisture sensors along with flow meter on ground water well.	\$136,752	\$15,981	Kern
Jim Bertagna	This project proposes to include irrigation management practices on 38 acres by adding 2 soil moisture stations to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$143,217	\$6,145	Glenn
Joe H. Silva	This project proposes to: upgrade current flood irrigation system to a new and efficient drip system, install a soil moisture sensor station to better track water infiltration, install a pump controller and flow meter to better track water usage and have more control over irrigation, install a weather station that will measure ET, temperature, rainfall, humidity, and wind speed. Install a new pump in order to replace an aging and inefficient pump.	\$50,023	\$0	Fresno

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Jonnalee Dunn Farms	This project proposes to add a flow meter and weather station on 37 acres of walnuts.	\$17,828	\$332	Colusa
Juan Briones	This project proposes to implement irrigation management practices on 19.47 acres by adding a soil moisture station to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter. The project will also include the installation of a 19.5kW photo voltaic system.	\$114,545	\$4,476	Glenn
Keenan Farming Company	This project proposes installing real time remote soil monitoring sensors, local Weather with Evapotranspiration (ET), plant health monitors and flow meters in a 528 acre pistachio field.	\$36,993	\$6,670	Kings
Ken Puryear	The project proposes to remove 40 acres of flood irrigated row crops and install almonds using a highly efficient point source irrigation system controlled with smart irrigation technology, soil moisture sensors weather station and local ET rates. A variable frequency drive and solar power are included in the project.	\$157,597	\$13,620	Tulare
L. G. Merriam Farms LP	This project proposes to install a pump with a more efficient motor, flow meters, and soil moisture sensors. It will also replace surface irrigation with a drip system on 75 acres.	\$141,008	\$20,313	Madera
Lambeth Farms	This project proposes to install a 30HP variable frequency drive electric panel on the irrigation pump to improve efficiency and reduce GHG; combining that with the installation of real time remote field monitoring equipment and a weather station to assist in the calculation of ET would help irrigate more efficiently. The sensors installed will be reading soil moisture levels and temperature from 6" to 40". The data will be used to determine the time and the frequency of the irrigation on 47 acres of young almonds	\$25,866	\$1,737	Fresno
Larry Hirahara Family Farm	This project proposes to install 21.96 kW DC Solar system to replace on average electric requirements and use a Wise-conn system to monitor soil moisture and weather station to apply exact amount of water needed by crop. The system will also be connected so pump can be turned off-on and duration adjusted remotely. A flow meter will also be installed to record water consumption. A self-priming pump will be installed to use surface water to connect to existing drip system.	\$67,025	\$15,646	Madera
LaVina Ag, LLC	This project proposes converting 18.5 acres from flood irrigated row crops to almonds with drip irrigation, installation of a variable frequency drive (VFD) on an existing pump, the construction of an 117kW solar power system which will produce 100% of the groundwater pumping power needs of 191 planted acres, and the installation of a telemetry system including flow meters, an on farm weather station, soil moisture sensors and a communication node.	\$200,000	\$156,412	Madera
LB Partnership	This project proposes to replace flood irrigation system on 200 acres with micro drip irrigation system. Micro drip irrigation system includes 20' x 13' spacing double row drip system, buried PVC piping, P.C. Dripper at 24" spacing, mainline, submain, manifold piping, sub-unit control valves, isolation valves, relief valves, eight tank sand media filter station with auto flush, and reservoir. Project also includes precision irrigation automation equipment.	\$199,864	\$165,572	Tulare
Legacy Growers LLC	This project proposes to remove three portable booster pumps driven by propane-powered Chevy engines, install one 60 HP electric booster with VFD control. In addition, 2,388 ft. of concrete pipeline will be removed and replaced with PVC pipeline which will increase water savings and reduce GHG emissions. Weather/soil moisture sensors, a flow meter, and volumetric management will also be implemented to the 76.8 acres of vegetables served by this pump.	\$195,192	\$12,500	Santa Barbara
Lodge Ranch Enterprises	This project proposes to retrofit the irrigation system and water management on a 40 acre citrus and avocado farm. The project will update old irrigation reservoir pump with new efficient motor, variable frequency drive and flow metering with pressure sensors to reduce energy use. The project will include the installation of solar equipment to power pumps together with weather and soil moisture monitoring hardware. An irrigation scheduling management plan will be implemented based on soil moisture and site- specific evapotranspiration data to lower water and energy use.	\$200,000	\$22,627	San Diego
Luis A Scattini & Sons, LP	This project proposes to install a 45.4 kW DC solar PV system to power the existing 125 hp electric vertical shaft turbine pump and a 60 hp electric booster pump. In addition, weather & soil moisture sensors, and volumetric management with the existing flow meter and proposed well level sensor will also be implemented on the 43.6 acres of lettuce served by this pump.	\$200,000	\$25,290	Monterey
Ly Farms	This project proposes to convert from flood to drip irrigation on a specialty vegetable operation producing tomato, green beans, peanuts, and sun choke. The project will increase pump efficiency and install a variable frequency drive.	\$68,378	\$14,465	Fresno
Mark Evans	This project proposes to switch from flood irrigation to micro irrigation system, install soil moisture sensors, variable frequency drive and converting pumps from diesel to electric.	\$122,700	\$149,897	Butte
Matt Jackson	This project proposes to install a low pressure double line drip irrigation system on 161 acres of stone fruit that is currently flood irrigated. A flow meter and VFD will be installed as well as moisture monitors in the field.	\$199,988	\$55,246	Fresno
Melissa Pruitt Farms	This project proposes to install a 60.2 KW AC solar system that will produce enough electricity to offset the energy use of a 50 horsepower electric booster pump, install new Netafim drip tape to increase irrigation system uniformity for 106 acres, install a soil moisture monitoring system with a weather station, install a Netafim NMC Pro Automation system that will monitor and control fertilizer injection into the irrigation system and electronically change water for the irrigation system based on a schedule created from soil moisture sensor readings, install a 50 HP variable frequency drive electric panel on the irrigation system booster pump to ensure the irrigation system operates at the designed pressure and conserves energy, install a magnetic flow meter on the drip system to record applied water in gallons per minute and total acre feet.	\$200,000	\$200,843	Merced
Michael Banducci Pistachios	This project proposes to replace two old energy inefficient pumps with more energy efficient pumps, one with a VFP pane. A diesel motor will be replaced with an electric powered motor. Additional solar panels will be installed along with a tail water recovery system, soil moisture monitoring equipment and flow meters.	\$199,931	\$21,436	Kern
Michael G Jackson	This project proposes installing a low pressure double line drip irrigation system on 155 acres of stone fruit that is currently flood irrigated. The pump will be converted from a diesel motor to electric. A flow meter and variable frequency drive will be installed, as well soil moisture sensors.	\$197,972	\$35,028	Fresno

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Michael Shaeffer	This project proposes to include irrigation management practices on a 31 acre walnut orchard by converting an electric pump to solar. Additionally the project will add a soil moisture station to monitor irrigation efficiency.	\$65,615	\$26,260	Butte
Mitchell Farms	This project proposes the installation of soil moisture tensiometers, weather sensors, variable frequency drives (VFD), and sand separation system in a 50 acre walnut orchard.	\$43,100	\$0	Sacramento
Nicholas Visser	This project proposes the installation of a low pressure double line drip irrigation system on 38 acres of stone fruit that is currently flood irrigated. A flow meter and soil moisture monitor will be installed.	\$105,486	\$19,894	Fresno
Nichols Vineyard	This project proposes to install a 42.8kW DC solar PV system to power the existing 50 hp submersible pump and a 15 hp electric booster pump. In addition, weather & soil moisture sensors, Tule ET and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 76.32 acres of wine grapes served by this pump.	\$200,000	\$16,153	San Luis Obispo
NRG Enterprises, L.P.	This project proposes to remove two portable Chevy propane booster pumps and install two 75 HP electric boosters with VFD control. In addition, 9,412 feet of concrete pipeline will be removed and replaced with PVC pipeline. Additionally, weather and soil moisture sensors, a flow meter, and volumetric management will also be implemented on the 111 acres of vegetables served by these pumps.	\$200,000	\$81,854	Santa Barbara
Nygren Hill Vineyard, LLC	This project proposes to install a 7.56 kW DC solar PV system to power the existing 7.5hp submersible pump. In addition, weather & soil moisture sensors, Tule evapotranspiration (ET) sensors and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 15 acres of wine grapes served by this pump.	\$85,325	\$12,500	San Luis Obispo
OSR Enterprises, Inc.	This project proposes to remove two portable Chevy 350 V8 propane booster pumps and install a single 75 HP electric booster with VFD control. In addition, 6,028 ft. of concrete pipeline will be removed and replaced with PVC pipeline. Weather/soil moisture sensors, 2 flow meters, and volumetric management will also be implemented to the 130.4 acres of vegetables served by this pump.	\$200,000	\$47,886	Santa Barbara
Paiva Farms	This project proposes to include irrigation management practices on 135 acres by adding soil moisture stations to monitor irrigation efficiency and monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$75,675	\$5,000	Butte
Pao Yang	This project proposes converting from flood irrigation to drip irrigation, increasing pump efficiency and installing a variable frequency drive on a specialty vegetable farm producing Chinese cabbage, green beans, lemon grass, green onions, peppers, and jujube.	\$104,830	\$5,883	Fresno
Parnagian Enterprises	This project proposes to replace a micro sprinkler irrigation system with a lower operating pressure and lower volume micro drip irrigation system on 195 acres of citrus. The project will also install a field located, PLC based, precision irrigation system with moisture sensing and weather station. New VFDs will be installed on the well pumps.	\$128,532	\$128,323	Fresno
Patel Farms	This project proposes to implement irrigation management practices on 12 acres by adding a soil moisture station to monitor irrigation efficiency and monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$43,541	\$2,511	Colusa
Pepper Tree Ranch	This project proposes to install real time remote field monitoring and water quality treatment equipment. Soil moisture sensors will be used to determine the appropriate interval between irrigation, depth of wetting, depth of extraction by roots and adequacy of wetting. The electronic flow meters, auto valves, soil moisture monitoring sensors and gypsum silo will all be tied together electronically via the RainBird platform.	\$58,675	\$81,513	Kings
Pete C. G. Silacci	This project proposes to replace an existing electric turbine with a high- efficiency, VFD-driven unit. Additionally, weather & soil moisture sensors, soil tensiometers and volumetric management with the proposed digital flow meters and pond level sensor will also be implemented on the 214 acres of row crops served by this pump.	\$198,601	\$12,500	Monterey
Pisoni Farms	This project proposes to install soil moisture tension monitoring sensors to improve irrigation scheduling and reduce overall groundwater pumping and energy use. The well pump and booster pump will also be powered by renewable energy with the installation of a 310.08 kW DC solar system.	\$199,716	\$153,552	Monterey
Potter Bundgard Ranch	This project proposes to remove a 50 HP electric vertical shaft turbine along with a 125 HP diesel booster and install a 125 HP electric powered turbine pump with VFD control. Evapotranspiration-based weather and soil moisture monitoring, and volumetric management with a flow meter will also be implemented on the 33.2 acres of berries and vegetables.	\$177,068	\$12,500	Monterey
Premier Agricultural Properties, LLC	This project proposes to install a total of 7 field monitoring stations which are comprised of tensiometers, a pressure switch, unshielded temperature sensor and a shielded temperature sensor to monitor soil moisture and weather in the field. A weather station will be installed along with 3 pulse output flow meters will be installed with Hortau smart stations to compliment the field monitoring component of this irrigation management system.	\$77,585	\$59,400	Santa Barbara
Pretzer Farms Inc.	This project proposes to convert 145 acres of almonds from furrow irrigation to drip irrigation. Water demand will be determined the combination of soil moisture sensors and local ET through weather stations. Flow meters will measure the amount of water applied. All of the information will be aggregated through a remote monitoring system.	\$166,466	\$40,308	Fresno
Quinn Vineyards East	This project proposes to install a 42.8 kW DC solar PV system to power the existing 50 hp submersible well pump and a 15 hp electric booster pump. In addition, weather & soil moisture sensors, Tule ET sensors and volumetric management with the existing digital flow meter and well level sensor will also be implemented on the 111.3 acres of wine grapes served by this pump.	\$200,000	\$15,399	San Luis Obispo
Rajkovich Brothers Partnership LP	This project proposes to install 25 Hortau field monitoring stations and two weather stations and will also convert a diesel pump to natural gas.	\$199,898	\$59,744	Santa Clara & San Benito
Red Gate Farms	This project proposes to install a low pressure double line drip irrigation system on 146 acres of stone fruit that is currently flood irrigated. A flow meter and variable frequency drive will be installed, as well as pump and soil monitoring measures.	\$198,749	\$95,378	Tulare

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Reina Properties	This project proposes to install an advanced irrigation management system which will enable the operation to save water and reduce GHGs while farming pistachios. The irrigation management system provides soil moisture tensiometers, flowmeters, variable frequency drives and a weather stations. In addition, an acid injection system is to be installed which will save water and reduce energy consumption.	\$200,000	\$50,000	Kern
RELM	This project proposes to install soil tension stations and weather station. The irrigation management systems will monitor and collect data in real time allowing the farm to determine soil moisture and soil tension.	\$94,066	\$50,000	San Joaquin
Richland Enterprises	This project proposes to implement irrigation management practices on 328 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally the project will monitor pumps efficiency by adding a flow meters to the discharges, and pressure sensors before and after the filters. The project will include the installation of a solar system to power each of the pumps.	\$200,000	\$164,707	Sutter & Yuba
Ronald C. Leimgruber Farms	This project proposes to convert 46 acres of alfalfa/field corn (rotating production) from sprinkler irrigation to lower pressure, more efficient sub- surface drip irrigation. The project will replace an old diesel pump with a new energy efficient electric pump and include the installation of VFD. Additionally the project will add flow meters to measure water use & install irrigation sensors and a Tule weather station to monitor crop water requirements & schedule irrigation events based on crop demand.	\$200,000	\$48,759	Imperial
Ronald J Machado	This project proposes to convert from flood to micro-sprinklers, upgrade current 20 HP river pump, which has an overall pumping efficiency (OPE) of 29% to 40 HP 45' slant pump that has an OPE of 61% with variable frequency drive (VFD) controller. The pumping site will be outfitted with a Seametrics flow meter and a Hortau station to transmit/document the flow rates in real time. A Hortau station and a weather station will be installed to provide information in real time.	\$114,805	\$43,875	San Joaquin
Salt Creek Orchards Group LLC	This project proposes to install 9 Hortau soil tension monitoring units and 2 weather units.	\$112,846	\$61,920	Colusa
Sam & Suzanne Etchegaray	This project proposes to install soil moisture monitoring systems. Weather stations will also be installed to monitor the local weather and water use by plants. Silos will be installed across the ranches to increase the ease of application of soil amendments such as gypsum, which will increase the water holding potential of the soil, improve the soil structure, and reduce water runoff.	\$199,999	\$10,442	Tulare
Samra Orchards LLC	This project proposes to include irrigation management practices on 135 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$59,656	\$6,361	Sutter
Satyam Farms	This project proposes to convert 200 acres from surface to micro/drip. The original diesel engine used will be removed and converted to electricity. The pumping sites will consist of new booster, VFD's, Flow meters, media filters, and fertilizer injection system. The irrigations will be scheduled according to Hortau's tensiometers and weather station which will provide and document information in real time.	\$198,973	\$259,206	Merced
Scott Anthony Ranch, L.P.	This project proposes to convert two (2) 173 hp 3056E Caterpillar industrial diesel booster pumps into two 75 HP electric booster pumps with VFD control on project sites 604 and 619. Additionally, weather and soil moisture sensors, flow meters, and volumetric management will be implemented on the acreage served by these pumps to increase water savings.	\$199,915	\$44,049	Monterey
Sean V. Doherty Farms	This project proposes to implement irrigation management practices on 145 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter. The project will convert a diesel booster to electric and have both pumps powered by a solar system.	\$162,286	\$6,645	Yolo
Seaver Farms	This project proposes to include irrigation management practices on 51 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to the discharge, and pressure sensors before and after the filter.	\$161,053	\$7,741	Colusa
Seth and Michelle Rossow Farms	This project proposes to convert a 29 acre field that is irrigated with sprinklers and furrow to a sub-surface drip irrigation system. Along with the drip irrigation system, the project includes implementing a soil moisture monitoring system and automation system to better manage when to irrigate and the length of time to irrigate.	\$153,159	\$10,000	Merced
Shafer Vineyards	This project proposes to install Tule evapotranspiration sensors. This technology will make real-time data available on mobile devices and desktop dashboards giving crop water status and irrigation recommendations.	\$31,500	\$31,500	Napa
Sierra Orchards	This project proposes to install a high efficiency pump motor paired with a VFD, replace a leaking, aged drip system with hanging micro sprinklers, and purchase a Davis weather station.	\$129,493	\$19,000	Solano
Sierra View Dairy	This project proposes to install a low pressure, low flow sub-surface drip tape system on 112.5 acres of corn/wheat that is currently flood irrigated. Two Irrrometer M900 moisture monitors with 3 sensors each will be installed and E.T. based irrigation scheduling will be implemented.	\$197,544	\$208,693	Tulare
Sill Properties Inc.	This project proposes to install and implement an advanced irrigation management system with soil moisture tensiometers, flowmeters, a variable frequency drive and a weather station. Additionally the project will convert flood irrigation to drip on 252 acres.	\$199,978	\$513,240	Kern
Sohal Brothers	This project proposes to implement irrigation management practices on 168 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding flow meters to the discharge, and pressure sensors before and after the filter.	\$59,401	\$7,387	Sutter
Stephens Ranch Inc.	This project proposes to install a micro-irrigation system to all field crops. Additionally the project includes the installation of solar panels.	\$180,139	\$16,916	Sutter
Steven Carter	This project proposes to install a 45.4 kW DC solar PV system to power the existing 40 hp electric vertical shaft turbine pump. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 50 acres of alfalfa and hay served by this pump to increase water savings.	\$200,000	\$18,851	San Luis Obispo

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Stovall Ranch	The project proposes to install a solar powered pump and motor for the tail water return system that gravity feeds the 70 acre irrigated cattle pasture. In addition, it will replace piping that takes water from the return system to the reservoir. Soil moisture motoring system will be added, along with a flow meter.	\$88,690	\$0	Sacramento
Sun Valley Ranches	This project proposes to include irrigation management practices on 145 acres by adding soil moisture stations to monitor irrigation efficiency. Additionally, the project will monitor pump efficiency by adding a flow meter to each discharge, and pressure sensors before and after the filter. The project includes the installation of a new solar system to power the pumps.	\$200,000	\$10,312	Sutter
Three Mac Farms	This project proposes to replace 150 acres of temporary above ground drip system and 145 acres of flood irrigation with an all below ground micro drip system. The temporary drip system is served by a temporary filtration system and a 240hp diesel engine driven pump. The temporary filtration system diesel pump will be replaced with a 100hp electric motor. Automated precision irrigation system equipment, including field moisture sensors, will be installed. A VFD will be installed on the electric motor replacing the diesel engine.	\$200,000	\$239,932	Fresno
Tower Oaks Vineyard, LLC	This project proposes to install a 20.2 kW DC solar PV system to power the existing 50hp electric submersible pump. In addition, weather & soil moisture sensors, and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 59 acres of wine grapes served by this pump.	\$142,912	\$12,500	San Luis Obispo
Travis Jones	This project proposes to install a low pressure double line drip irrigation system on two ranches, 93 total acres of stone fruit that is currently flood irrigated. Flow meters and soil moisture monitors will be installed.	\$188,645	\$45,851	Fresno & Tulare
Triple C Farms	This project proposes to convert the current furrow irrigation system to sub- surface drip irrigation for row crops. The project includes a new propane powered engine to replace a diesel engine and improvements to the existing pump to pressurize the system, and place water in a pvc mainline to increase efficiency.	\$137,868	\$2,775	Sutter
Triple E Livestock & Land, Co.	This project proposes to install soil moisture monitoring systems. Weather stations will be installed to monitor the local weather and water use by plants. Silos will be installed across the ranches to increase the ease of application of soil amendments such as gypsum, which will increase the water holding potential of the soil, improve the soil structure, and reduce water runoff.	\$200,000	\$8,069	Tulare
Troy Jackson Farms	This project proposes to transition from open flood irrigation to drip irrigation system and installation of real time remote field monitoring equipment to help irrigate more efficiently. The sensors installed will be reading soil moisture from 6" to 40" and soil temperature at various depths.	\$22,302	\$24,150	Tulare
Ty Muxlow Farms	This project proposes to install soil moisture sensors with electronic data output and flow meters to ensure efficient irrigation scheduling of 110 acres of stone fruit. Renewable solar energy is also included in the project.	\$197,884	\$0	Tulare
V & R Church Ranch	This project proposes to install 7 Hortau soil monitoring stations along with a full weather station.	\$84,448	\$5,292	Colusa
Vang Thao	This project proposes to convert from surface to drip irrigation, increase pump efficiency and install a variable frequency drive for a specialty crop vegetable operation producing green beans, eggplant, crucifers, and peppers.	\$54,306	\$14,225	Fresno
Vann Family Two, LLC	This project proposes to install Hortau moisture monitoring stations, weather stations for 248 acres of almonds.	\$125,206	\$5,040	Colusa & Yolo
Vann Peterson Farms Partnership	This project proposes to install 8 Hortau soil monitoring stations along with a full weather station for 322 acres of almonds.	\$93,489	\$56,400	Colusa
Verwey Farms	This project proposes to install a PVC Pipeline to replace open ditches that are used for irrigating corn & wheat. This will eliminate water being pumped from the 5 wells and the dairy manure wastewater, into unlined ditches, then using 4 Tractor ran side-winders, the water is pumped from the canal in to the corn & wheat fields.	\$200,000	\$89,336	Kings
Wawona Packing Co. LLC	This project proposes to install soil moisture monitoring equipment and weather sensors. Flow meters will be installed across all ranches to ensure the proper amount of water is applied and can be monitored throughout the season. Lastly, several ranches that are currently furrow irrigated will be converted to micro-irrigation to reduce the amount of water that must be applied to appropriately irrigate the crop.	\$200,000	\$161,909	Tulare
Wellsona Vineyards, LLC	This project proposes to install a 35.3 kW DC solar PV system to power the existing 75 hp turbine pump. In addition, weather & soil moisture sensors, Tule evapotranspiration (ET) sensors and volumetric management with the proposed digital flow meter and well level sensor will also be implemented on the 67.17 acres of wine grapes served by this pump.	\$200,000	\$19,142	San Luis Obispo
Whiskey Hill Farms	This project proposes to replace a leaking 70,000-gallon water storage tank with 5 15,500-gallon tanks. The energy efficiency of the farm will be enhanced by replacing an old well pump operating at 9% efficiency with a new high efficiency pump and installing two VFD's. Soil tension sensors will be utilized to improve irrigation scheduling by monitoring the real time needs of the crops. Lastly, greenhouse integrated photovoltaic panels will be used to generate solar power that will offset the energy used to power the well pump.	\$199,907	\$39,239	Santa Cruz
William Pruitt	This project proposes to install a 60.2 KW AC solar system that will produce enough electricity to offset the energy use of a 75 horsepower electric booster pump. Additionally the project includes the installation of new Netafim drip tape to increase irrigation system uniformity for 172 acres, the installation of a Pure Sense soil moisture monitoring system with a weather station, the installation of a Netafim NMC Pro Automation system that will monitor and control fertilizer injection into the irrigation system. A 75 HP variable frequency drive electric panel will be included on the irrigation system booster pump.	\$200,000	\$200,820	Merced
Wilson Farms	This project proposes to install variable frequency drives, soil moisture probes, weather stations, pump flow meters and in-field flow meters, all such devices incorporating radio telemetry for upload to cloud servers, to be used in conjunction with commercial crop modeling and pump monitoring software. Additional energy savings will be achieved through the elimination of pump bypass systems.	\$74,760	\$52,045	Yolo