California Energy Commission
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Commissioner Robert B. Weisenmiller
Commissioner Carla Peterman
California Energy Commission
Dockets Office MS-4
1516 Ninth Street
Sacramento CA 95814-5512

VIA: docket@energy.ca.gov

Re: Docket No. 12-EPIC-01

Dear Commissioner Weisenmiller, Commission Peterman and CEC staff,

We appreciate the opportunity to comment on the California Energy Commission's draft investment plan for the Electric Program Investment Charge (EPIC) Program.

The California Climate and Agriculture Network (CalCAN) is a coalition of sustainable agriculture and farmer member organizations working on the nexus of climate change and agriculture policy issues.

Our comments are focused on how to support California's $43 billion agricultural industry in developing clean energy sources and adopting new energy and water use efficiency measures in ways that support our state's farmers, ranchers, rural communities and environment.

**1. S3.2: Develop Innovative Technologies, Techniques and Deployment Strategies to Accelerate the Commercialization of Sustainable Bioenergy Systems**

We support the CEC's efforts to develop sustainable bionergy production in the state as described in S3.2: *Develop Innovative Technologies, Techniques and Deployment Strategies to Accelerate the Commercialization of Sustainable Bioenergy Systems* (page 54). However, the current definition of sustainable bioenergy is too limited.

We recommend expanding the definition to include the protection of agricultural soil resources. Many agricultural by-products can be used sustainably to produce bioenergy, but some by-products are not suitable because they can be re-incorporated into soils to improve soil organic matter, which in turn improves crop yields, water-holding capacity of soils and carbon sequestration – important climate mitigating and adapting activities that would be compromised if the resources were converted to energy.

As the country's largest agricultural state, California has promising agricultural by-products that can be utilized for clean, renewable energy production without jeopardizing agricultural residues needed to maintain healthy soils.

Food processing waste (e.g. nut shells, hulls, pits, cotton gin waste, etc.) from the state's food processors and producers can be utilized as feedstock for biogas projects that produce combined heat and power.

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According to a CEC-funded report, the state produces 1.5 million tons of food processing waste every year[1].

Dixon Ridge Farms in Winters, CA uses walnut shells to fuel its combined heat and power 50kW bioenergy facility, soon to be 150kW. Gil's Onions in Ventura County uses waste from its processing plant as the feedstock for its fuel cells. We support state investment in model bioenergy projects in agriculture that can be replicated because they can help to lower overall project development costs. Additionally, providing funding to reduce the initial capital costs of bioenergy projects can spur farmers and processors to invest in bioenergy production.

However, other potential bioenergy feedstocks from agriculture may impact agricultural production by taking away resources needed for soil building. For example, another potential feedstock is woody biomass from orchard and vineyard prunings. According to the CEC biomass report, the state has 2.5 million tons of woody biomass from orchard and vineyard prunings and tree and vine removals[2]. Roughly, one million is currently used as a fuel stock in power plants. However, further study is needed to examine the feasibility of using woody biomass from orchards and vineyards for biogas projects without jeopardizing soil building activities (e.g., chipping prunings for compost or mulch, etc.)[3].

**Recommendations:** Expand the definition of sustainable bioenergy to include the protection of soil resources. As part of the Biomass Processing and Handling Systems R&D focus (page 55) of S3.2, include research that investigates technologies and approaches to agricultural bioenergy that protect soil resources and limits the use of agricultural by-products to those that are unsuitable for soil building activities (e.g., food processing waste).

**2. S5.2: Research on sensitive species and habitat to inform renewable energy planning and deployment**

The housing crisis has slowed the development of agricultural and open space land for new housing developments, but the current push to meet the state's Renewables Portfolio Standard (RPS) of 33 percent renewable energy production by 2020 has created new pressures to develop largest-scale solar on farm and grazing lands. The southern San Joaquin Valley, encompassing some of the state's highest-producing agricultural counties, is among the most impacted areas for solar development. Similarly the Imperial Valley is experiencing a boom of renewable energy development on agricultural land.

Since January 2012, 45 solar-PV projects have been approved in the southern San Joaquin Valley. According to a recent report by the Defenders of Wildlife, "If financed and constructed, these projects would encumber 17,570 acres of farm and grazing land and generate as much as 1,648 megawatts of power[4]." Additional solar-PV projects are proposed for the southern San Joaquin Valley and could take

[1] http://biomass.ucdavis.edu/files/reports/2008-cbc-resource-assessment.pdf
[2] Ibid.
[3] The Agricultural Sustainability Institute at UC Davis is working on a life-cycle assessment of the almond industry that addresses a number of these questions. This work should be incorporated into the development of biomass technologies based on orchard feedstocks. Similarly study is needed with vineyards and other sources of agricultural by-products. See: http://asi.ucdavis.edu/sarep/sfr/10%20AIR8%20Kendall%20Life%20Cycle%20Assessment%20of%20GHG%20Emissions%20for%20Almond%20Production%2011-1-11.pdf
[4] Kelly, K. and K. Delfino. 2012. Smart from the Start: Responsible Renewable Energy Development in the Southern San Joaquin Valley. Defenders of Wildlife. page 6.

up an additional 23,000 acres of farm and grazing lands. Some of these acres will be on impaired lands, especially those acres on the western side of the valley. However, a number of solar projects will impact prime agricultural lands.

The draft investment plan includes the proposed funding initiative: *Research on sensitive species and habitat to inform renewable energy planning and deployment* (S5.2 – page 71). The proposed funding initiative will examine how utility-scale renewable energy impacts, including bioenergy, may impact species and habitat protection. We support this work, but renewable energy impacts on agriculture most also be similarly examined.

We risk significant unintended consequences by converting agricultural land into renewable energy production with little understanding of the cumulative impacts to food production, natural resources protection and rural communities.

**Recommendation:** Fund research examining the cumulative impacts of renewable energy development on agricultural production, with a special focus on the Central and Imperial valleys, including impacts to food production, natural resources (e.g. water, species, habitat) and rural communities (e.g. economic impacts).

**3. S11.1: Identify and Demonstrate Promising Energy Efficiency and Demand Response Technologies Suitable for Commercialization and Utility Rebate Programs**

As part of the CPUC proceeding on Energy Efficiency Programs, the IOUs are developing water-nexus plans to incorporate within their energy efficiency (EE) programs support for water use efficiency measures. The CEC has identified an important nexus between the IOUs' EE programs and EPIC's research agenda, as described in S11.1: *Identify and Demonstrate Promising Energy Efficiency and Demand Response Technologies Suitable for Commercialization and Utility Rebate Programs* (page 111). We support these efforts and recommend that the research agenda include examining promising water-energy saving activities in agriculture that go beyond engineering approaches.

A 2011 report on Agricultural Water Stewardship by the California Roundtable on Water and Food Supply[5] notes a host of on-farm practices that improve water use efficiency, including farm management practices that improve the water holding capacity of soils, improved groundwater recharge, soil sensing monitors and regulated deficit/dry farming techniques, among others. These practices and technologies can save water and related energy use, and they go beyond technological approaches such as improving irrigation efficiencies and leak detection.

**Recommendation:** Expand the focus of S11.1 to include research of on-farm practices that provide water and energy use savings through changes in management and emerging technologies, such as soil moisture sensors.

**4. S16.2: Conduct Technology Forums to Connect Innovators of Clean Energy Technologies with Potential Investors, Customers, Job Seekers and Policymakers**

Renewable energy and energy efficiency technologies and related policies are dynamic, presenting new opportunities and challenges for stakeholders. As described in S16.2: *Conduct Technology Forums to*

[5] http://aginnovations.org/agwaterstewards.org/uploads/docs/CRWFS_Water_Stewardship_Recs_electronic.pdf

*Connect Innovators of Clean Energy Technologies with Potential Investors, Customers, Job Seekers and Policymakers* (page 152), coordination among groups is needed to overcome barriers and achieve the state's clean energy goals.

We support the funding of clean energy forums to inform stakeholders on technology, policy and strategy issues. However, we recommend that a portion of the forum funding go towards third party stakeholders with expertise in particularly sectors or technologies, e.g. agriculture, commercial, bioenergy, etc., to conduct the forums. Those closest to the targeted industries or technologies can best reach key participants and develop forum agenda that are targeted, practical and coordinated with the CEC.

**Recommendation:** Develop a competitive grants program to achieve S16.2 to fund clean energy forums throughout the state to meet the objectives of the investment plan. Eligible entities, including non-profits, trade associations and others, should demonstrate expertise and experience with targeted participants and related technologies.

California's farms and ranches produce more renewable energy than their counterparts in another state, but challenges remain to support the expansion of a clean energy in our agricultural communities. We look forward to working with the Commission to overcome barriers to clean energy and meeting the state's climate change and clean energy goals while promoting a vibrant California agriculture.

Sincerely,

Jeanne Merrill
Policy Director