MEETING OF THE CALIFORNIA STATE BOARD OF FOOD AND AGRICULTURE

(ALL MEETINGS OPEN TO THE GENERAL PUBLIC)

Location: CA Dept of Food & Agriculture
Main Auditorium
1220 N Street, First Floor
Sacramento, California 95814

Contact: Helen Lopez
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MEETING MINUTES FOR JANUARY 16, 2007

Item No.

(1) CALL TO ORDER

(a) The meeting was called to order Tuesday, January 16, at approximately 2:00 p.m. Al Montna, President of the State Board of Food and Agriculture presiding.
(b) Welcoming remarks provided by Al Montna.
(c) Pledge of Allegiance.

(2) **ROLL CALL**
Roll call taken by Helen Lopez, Executive Director. A quorum was present.

Present:

Wayne Bidlack	Craig McNamara	Karen Ross
Ann Bacchetti-Silva	Al Montna	
Drue Brown	William Moncovich	
Luawanna Hallstrom	Adan Ortega	

Absent:

Ashley Boren	Tom Deardorff	Marvin Meyers
Don Bransford	Reg Gomes	

(3) APPROVAL OF MINUTES – November 29, 2006

MOTION: Board Member William Moncovich moved to approve the minutes of the November 29, 2006 meeting. The motion was seconded by Board Member Wayne Bidlack and a unanimous vote carried the motion.

(4) OPENING REMARKS AND INTRODUCTION

Steve Shaffer, Director of Agriculture and Environmental Stewardship provided opening remarks in Secretary Kawamura's absence. He introduced key members of the audience and thanked the staff members who organized this meeting hosting the 25x'25 Group.

Secretary Bradshaw, California Labor & Workforce Development Agency, emphasized the importance of this meeting of the 25x'25 Group to California, not only to our economy but to our future in terms of economic development and energy. She welcomed the members of the 25x'25 Group.

Secretary Chrisman, CA Resources Agency, stated that he too was pleased to be part of the discussion of renewable energy and its importance to our economic future. He thanked the members of the 25x'25 Group for including California in this initiative.

Al Montna asked for introductions from the 25x'25 Group members.

(5) OTHER BUSINESS

None

(6) PRESENTATIONS BY GUEST SPEAKERS

J. Reed Smith, Overview of 25x'25 Initiative and Presentation by Steering Committee Co-Chairs

On behalf of the 25x'25 Steering Committee, Reed Smith thanked the Board for hosting the meeting and expressed appreciation for the endorsement and support of the Board. The Steering Committee looks forward to working with the Board in the interface of California initiatives.

He indicated that energy has and probably always will be the linchpin of our economy; it drives the economy the most. Historically, energy has been cheap and abundant; unfortunately these fossil based fuel systems are not sustainable. There are declining supplies; in the late 70's oil production peaked in the United States while consumption increased at an increasing rate. The United States controls two to three percent of the world's oil reserves; yet, we consume about 25 percent of all the energy produced in our country. Today, we import about 60 percent of our needs from very volatile parts of the world. The costs of all these sources of fuel are going up in every conceivable source. These problems are going to persist as the world supplies go down and this is something we need to deal with. In addition, as California is acutely aware, there are serious environmental concerns around using fossil based fuels. The 25x'25 initiative goes a long ways toward helping to solve some of those problems.

In 2004, our country produced about 70 Quadrillion (quads) BTUs of energy and consumed about 99 Quadrillion BTUs, leaving an energy gap of 29.3 quads of energy all of which was imported some other sources. Projected to the year 2025, we will produce 86 quads and consume 127 quads producing an energy gap of 40 quads. This is why it is important to have the 25x'25 initiative and to be successful. This initiative was created from the bottom up; it came out of the agriculture and forestry sectors. This is not an inside the beltway, top down initiative. Members are volunteers who are non-government, although, government partners are needed. The initiative is supported by the Energy Future Coalition, this by-partisan group agrees on a new energy paradigm. The vision was to bring agriculture and forestry together to explore its role in energy production. The focus was on three major components of the initiative: the economic stimulus this would provide, the national security benefits of a new energy paradigm based on renewables, and environmental benefits.

Since 2004, the steering committee membership has grown to 25 members. The initial plan was divided into four phases: create a vision, build an energy alliance, construct an implementation strategy, and work to bring the 25x'25 initiative to life.

The core questions of phase one in the development of a vision was: what role can the farm and forestry sector play? How big a contribution? And, what has to happen? Some of our country's best experts were brought in to the discussion and what was realized is that this is an historical and monumental opportunity for agriculture and forestry. It is time for agriculture and forestry to come together and work collaboratively to capitalize on these opportunities. The vision is that by the year 2025, America's farms, ranches and forests will provide 25 percent of the total energy consumed in the United States while continuing to produce safe, abundant and affordable food, feed, and fiber. These goals will be met by producing: transportation fuels, harnessing wind energy, converting biogas emissions, capturing solar energy, and providing biomass for generating heat and power. This vision is economically viable and with emerging technology we can produce multiple commodities.

In 2004, in the approximate 100 quads of energy consumed, 5.7 quads of that energy was from renewable energy. The goal for 2025 is to increase this to 31.7 quads of renewable energy and producing 127 quads of the total energy consumed. It is anticipated that this will generate an increase of $180 billion in farm income, added value uses, and alternative enterprises, more productive uses of marginal lands, assist in resolution of air, water and soil quality problems, reduced reliance on government payments, and enhanced rural economics. Equally important are the benefits to the Nation: enhanced security by reducing our dependence on foreign oil and minimizing the catastrophic events of a serious withdrawal of supplies from the world; we will improve the environment, the RAND study indicated that we can take a billion tons of CO2 out of the air in a 25x'25 world; and, we will have a revitalized economy. The University of Tennessee tells us that this is a $700 billion new industry.

Biomass resources are everywhere, available in every state and each of us will play a role as we develop this industry. Wind and solar resources are also everywhere, especially in the southwest regions of our country.

Phase two was spent testing the vision and building an ag/forestry alliance. This culminated in the spring of 2006 with the National Ag/Forestry Renewable Energy Summit in Washington, DC. Newt Gingrich said, "From the time the pilgrims landed to today, the technology that moved the world is the same change that we are going to see from today to 2025." This is very exciting when we consider all the possibilities this rapid change will forge in the future for renewable energy.

Phrase three and four is to bring the vision to life through alliances. To date, 350+ farms, businesses, energy and environmental organizations; 16 governors, 6 former governors, and 4 state legislatures have endorsed and support the 25x'25 vision. We are reaching out to other partners in environment, conservation, labor, religious groups, energy and other groups. The role of these alliances are to ensure grass roots participation and ownership and a vehicle to unite state level champions and channel support to national and state initiatives.

The 25x'25 vision is achievable. We have the technology, capacity and leadership to offer new energy solutions. These solutions will enhance farm income and strengthen rural communities and the public is behind us.

Two studies were conducted: RAND analysis of impacts on national energy expenditures and CO2 emissions; and, the University of Tennessee forecast of impacts on the agriculture sector. The results of these studies are available on the 25x'25 webpage at www.25x25.org.

Sean Walsh, Senior Advisor to Governor Schwarzenegger

Mr. Walsh provided an update on where we are today and the Governor's perspective, particularly how it relates to 25x'25. He indicated, in the State of the State, the Governor has made some exciting announcements that are the result of four years of work. The Governor's goal is to change the world of infrastructure and to change the world of the environment and the way we deal with fuels and our reliance on foreign fuels. Since day one, he has dispatched members if his administration to go out and look for new technologies to enhance what California does so well to bring new markets to the state and improve our environment. Over the last year and a half, he has dispatched me to meet with people in the private sector, the academic sector, and the scientific community, to see what types of technologies are available and how we can look to the future and enhance what is happening at the national level. Also, he said, California is not an 800 lbs. world but an 8 million lbs world, so goes California, so goes the country and the world. He saw a way in using this type of research, this type of development, this type of expenditures not only to grow our economy but to bring synenergy together from industry that normally or not necessarily meet. He dispatched me to the University of California to meet with their researchers as part of a $99 million investment to bring technologies here for development at the University of California to spin off businesses. The Governor wants to interface synenergy between industry and agriculture; he believes we have the possibility to bring in industries like electric utilities and telecommunications to compete on a massive scale. It is important to stress this is not a mandated issue, we are priming the pot. The solar home initiative helps create an industry along with the carbon fuels initiative of a 10 percent reduction of carbon fuels by 2010. The Governor's cabinet members are people on the cutting edge on these new technology initiatives. The Governor supports the 25x'25 initiative and is committed to provide the capitol and intellectual investment needed to bring this initiative to life at the state and national level for a new energy future.

William Richards, Co-chair 25x'25 Project Steering Committee

Mr. Richards indicated that the 25x'25 initiative started out as a dream, however a stretch, it will become a necessary. The excitement is what it will do for national security and for the economy; also, for rural America. In the past, we've more than fulfilled the demands for food and fiber, we enjoyed excess capacity. With energy, we have a demand that we may not be able to fill, so it's a new world for rural American and agriculture. We are going to see the greatest land use change that has been seen in our life times. It is a good time to be a farmer.

Ernie Shea, Project Coordinator, Committee Member 25x'25 Project Steering Committee

This visit today is the direct follow-up to the endorsement the State Board made to the 25x'25 vision last summer when Mr. Shea provided an overview of the Steering Committee's work throughout the country. The Steering Committee appreciates the Board's support and the support of the Governor. Obviously, the Steering Committee wants to see this happen throughout the country. The Steering Committee wants to support California's efforts and to learn from California as well. There is a tremendous amount of leadership in California to draw from as we work to bring this new renewable energy vision to light. The Steering Committee's visit in California allows for the

discussions of the types of support services that can be provided at the state level. Secretary Kawamura is providing the leadership needed to get a California 25x'25 alliance up and running. The 25x'25 Group has resources that are available including facilitators and models from other states. The key to 25x'25 is leadership and we have seen the initiative take root and grow all the across the country because of the volunteer leaders that guide, direct, and support the project. Our national steering committee members are at today's meeting and are the examples of what we are finding all across the country. Our organizing model is rather basic, we recruit leaders at the state level, we help them come together, we facilitate a discussion where they create a vision for their state, we help them build a implementation plan, we suggest ways to build more and more support into their plan, and help them launch whatever it is the leaders of these states want to see happen. We are very confident that California is going to take 25x'25 to a whole new level of leadership for the nation.

Michael Bowman, Member, 25x'25 Project Steering Committee
Mr. Bowman indicated, in many ways, Colorado is a state in transition, much like many states across the central Great Plains and across the United States. We have become increasingly urban and in Colorado we have a growing environmental community. Colorado is the home to the National Renewable Energy Laboratory and home to Noah, INCARB, and Boulder which we affectionately refer to as 15 square miles surrounded by reality. One of the great lessons in agriculture for Colorado is bringing together communities that have historically been at odds with each other, the environmental community verses the farming community. We have found that we can no longer afford the luxury of being foes, we need to be friends.

During the last five years, Colorado has worked to put a renewable energy portfolio standard in place through the legislature. For three years we tried and three years we failed, even though a public polling showed 70 percent of Coloradans wanted such a plan. In 2004, we put together a citizens' ballot initiative. In November of 2004, Colorado became the first state to have a citizens' initiated renewable energy portfolio standard in the Nation. Amendment 37 calls for 10 percent of our total energy consumption of electricity to come from renewable resources. In Colorado's great divide the debate of amendment 37 was urban verses rural and how to bring resources from the rural parts of Colorado into the urban areas and to get people to work and think differently than they had before. Through the Amendment 37 process we brought together the Colorado Farm Bureau, the Rocky Mountain Farmers Union, Environment Colorado, and labor. We decided we had more to gain by working together and at the end of the day. Amendment 37 was passed with 53 percent of the vote. As a result, Colorado has set the pace for a new energy future.

Colorado has about 3 million acres of state used land and the new Governor has vowed to make energy for education one of his focuses. Colorado plans to use the 3 million acres for energy development to off-set and mitigate energy costs. Colorado's Governor is committed to developing a new energy economy. Committees have been formed to double renewable portfolio standards to 20 percent and 10 percent energy efficiency and conservation standards into the State's constitution.

Charles Bronson, Member, 25x'25 Project Steering Committee

Florida has the largest department of agriculture in the country, other than the USDA. It has 38 hundred employees that handle everything from plant and animal issues, forestry, consumer services, food safety and public health. Mr. Bronson is on the Board for Homeland Security in Florida and is a certified law enforcement officer, the only member of the Florida cabinet who is certified. His background is in the cattle industry and he comes from a family who has been in agriculture since 1635. When Nathan Rudgers was the president of the National Association of State Departments of Agriculture (NASDA), he was the president of the Southern Association; this is when he first heard a presentation on 25x'25. He assigned Jay Levenstein, Deputy Commissioner, to travel the country and attend the meetings and talk about these fuel issues with agriculture being a key player. Florida is considered the state with the most year round water supply, sunshine, and biomass capability of any other state in the country. It just makes sense that Florida would be part of 25x'25. A 25x25 resolution was proposed to the Florida Cabinet last year and the policies are called "Farm to Fuel" and proposed under the 25x25 national guidelines for getting agriculture involved. Alternative ideas for discussion and development include non-native invasive species. Florida has over 8 thousand acres of Brazilian Pepper. The University of Florida has developed celluloses technology that uses bacteria to actually cook cellulose into fuel at a rate of 1 ton of cellulose to equal approximately 108 gallons fuel. Florida's environmental community endorses the efforts of 25x25 and is working to develop ways to keep Florida agriculture in production without losing the food & fiber component. The intention is to farm normal food crops and grow a second or third fuel crop. Farmers in the State of Florida are looking at this very closely and are seeing ways to hold off the environmental charge of mandating certain things in to Florida law on development issues. Growth management is a large component, as with other states. This gives us the opportunity to say to the environmental community; if we keep a farmer farming, the farmer will keep the land and won't sell to developers. The first "Farm to Fuel" summit was held in Florida in August with tremendous success. At the end of the year, through the legislative process, $15 million was put into a renewable fuels package that our Department of Environmental Protection put into play. $5 million has been set aside for agriculture. The other $10 million is available for grants and half of these grants are going to those in agriculture who are looking in to citrus processing facilities that will use peels, sugars, and pulp to make ethanol. We are looking for all kinds of agriculture combines to come together (co-ops are a possibility) though private and government sponsorships to build this renewable fuels industry. Florida can produce millions of tons of biomass that includes all acres of non-native invasive species. This can be a true environmental positive for the State of Florida. It is expected that the 25x25 resolution will be passed by the Florida legislature this year.

Nathan Rudgers, Member 25x'25 Project Steering Committee

Nathan Rudgers is the former Agricultural Commissioner from New York State and the former President of the National Association of State Departments of Agriculture. In that capacity he got to know Secretary Kawamura. New York is the second largest cabbage and apple producers in the country and the third largest dairy state. New York is also a destination ethanol market. The market between Pittsburg and Boston is about 1.2 billion gallons as a result of the banning of MTBE (methyl tertiary-butyl ether) and the establishment of renewable fuels industry in the Northeast. Cilion, a California based Destination Ethanol Company is expected to open 8 new facilities throughout the country, two of which will be in the State of New York. Through my role in farm credit,

I do development work to get new businesses to make investments in agriculture. New York is an agricultural state and also a state that has taken a leadership role in developing renewable energy policies. The most important characteristic of policies being developed is balance. New York has a 25 percent renewable portfolio standard for electricity production. It also has an incentive to create biofuels industries by providing a per gallon tax credit up to a half million dollars per year (refundable to biofuel producers). New York is taking steps to develop its E85 capacity by authorizing (in its next contract round) the establishment of E85 stations in each of our two-way rest stops. We need to think in terms of developing infrastructure as part of the public sectors role in establishing incentives to achieve the 25x'25 vision. New York is also a rural state and renewable energy development is about rural development. The greatest single asset in capacity that rural America has is its land base. Re-invigorating land base businesses will re-invigorate our rural economies. One way to do that is by embracing new technologies that will bring back land that has been idle. There are over 2 million acres of under utilitized, abandoned, or otherwise non-productive farm land that is not producing anything of value towards the economy. Last year, prior to leaving state service, I encouraged the Governor to fund a cellulosic ethanol initiative in New York. Before the Governor left office, he announced the awarding of two grants, one for $15.3 million and one for $10 million to two companies that will establish cellulosic ethanol production facilities in New York. One will use technology that turn grass and wood chips directly into ethanol, the other will use a process to flush sugars from woody biomass, break it down into by-carbon sugars, ferment it, and use the cellulose that is left to burn as an energy source for this ethanol production process. These are just a few examples of the incentives being conducted in New York.

Presentation on Energy, Climate and the Helios Project
Dr. Steve Chu, Director, the Lawrence Berkeley National Laboratory
Dr. Chu thanked Secretary Kawamura and the 25x'25 Steering Committee for inviting him to make a presentation before the State Board. He also added his support for the 25x'25 initiative. He stated there are many reasons to be concerned about energy and renewable energy. National and International security are now intimately tied to energy security. Going forward with reasonable priced energy in the future and being able to use it more efficiently will definitely be tied to economic prosperity. Countries that use energy efficiently will prosper more than those who waste it. There are environmental costs associated with energy efficiency.

The United States is currently importing approximately 60 percent of its oil. What many people have forgotten is that in 1970, we were an oil exporting country. In fact, we were the biggest oil producer in the first half of the twentieth century. China mirrors the same; it was an oil exporting country until 1993 and now imports over half its oil. The fact that China, India, and other developing countries are beginning to use more and more oil, creates a collision course. It is beginning to define our whole geo/political outlook, not only in this country, but in countries around the world. It just makes sense to get off of this source of energy or at least moderate it. Another thing not fully appreciated, when looking at imports of fossil fuels in 2005, the United States spent $250 billion dollars compared to the balance of trade for the entire United States which was a negative $750 billion. As energy and oil prices all go up this will get worse not better. As the cost oil imports increase from 60 percent to 75 percent, this will get worse in a very short time.

The earth is warming up, 2006 data indicates that 2005 was the warmest year in the instrumental record and probably the warmest in 1 thousand years. The question, is this caused by humans? When modeling all the solar variations (natural causes) and human

generated greenhouse gases you get a measurable fit that temperature rise is due to human emission of greenhouse gases. Greenhouse gases keep the heat in. It is becoming very clear, by the preponderance of evidence, that humans are causing this. One prediction, (although not a certainty, there is a debate whether it is an 80 percent or 90 percent certainty) is that the Sierra snow pack will decrease at a rate of 30 to 70 percent in this century. Sierra snow pack is a major source for water storage so this is a very alarming scenario. This is not only true in California; it is true all over the world. Every major snow packing glacier tracked is decreasing; the rate of decrease is approaching an astounding rate of a meter per year. In a fifty year average, we have lost 14 meters of glacial thickness. This is of growing concern all the over the world as the predictions indicate major water storages. If this is a 75 percent probability, let's take the middle of the road, and think about what we might do as modest insurance. The great agricultural productivity in both California and the Midwest is at risk with the least alarmist predictions of climate change effecting temperature, water storage, moisture and soil. Once CO^2 emissions are in the atmosphere, it circulates between the land, the oceans and the atmosphere. This dose of CO^2 lasts for quite a long time; the debate is whether it will last a 1 thousand years or 3 hundred years. This is new territory, so it is important what we do today to reduce CO^2 emissions and there are things that can be done.

Dr. Chu is the current director of Lawrence Berkeley Laboratory (not to be confessed with Lawrence Livermore Laboratory) a basic science laboratory adjacent to the University of California Berkeley. It is the oldest laboratory in the complex and no classified work is being preformed at the laboratory. It is a distinguished laboratory, 11 employees in its history have been awarded the Nobel Prize, one in 2006.

Dr. Chu joined the laboratory in 2004 because of his increasing concern for energy and environmental problems. Since the middle 1970s, the laboratory has been focused on developing energy efficiency strategies and technologies. The best and most productive scientist (the ones who are going to get Nobel prizes) were not devoted to solving this energy problem but instead were doing the science to make them famous. It is possible to engage talent of this magnitude to really do something about energy? Over the last two years this question has taken hold. Many of the scientists are meeting to think of ways to team together and work as a cohesive unit to address these energy issues. The basic idea is to use solar energy in various forms; ultimately, to create transportation fuels. However, if you develop a new class of photovoltaics solar cells to make electricity that would be good in itself. If electricity is developed, not only from photovoltaics, but also from wind waves and nuclear; the question becomes, can this electrical energy then be converted to a storage form of energy that can ideally be used for transportation? Suppose the sun would be shining on a regular basis to bank on this. How much land would be needed to satisfy all of U.S. electricity? Roughly, land equal in size to the southern desert area of Nevada approximates how much land it would take at 15 percent conversion efficiency. One reason this is not moving forward; photovoltaics are, at a factor of 10, more costly in terms of investment costs compared to the production life of a photovoltaic cell. The cost of wind is actually going down; but, because it is transitory in nature it is discounted by utility companies because it can't be used as a base load system. One possibility is conversion into a chemical energy and then to convert it back. Hydrogen is a possibility. Again, transportation fuel, liquid fuel remains of highest value.

Is there sufficient land for food and fuel? Will bio-fuels actually help the CO^2 emission problem? Can we actually get environmentally sustainable generation of bio-fuels and energy balance? How much energy is required to produce bio-fuel energy? What is the

cost of bio-fuel production? These are the questions science, research, strategies, and technologies must address as we move toward a new energy future.

Agriculture has done amazing things, for example, in the United States since 1930 until 2006, the average yield per acre has gone up 8 fold. In fact, in the world, despite the fact that most of the world doesn't use modern agricultural methods, the population from 1950 to 2000 went up roughly from 2 billion to over 6 billion people. The amount of land put into production went up by 15 percent. In developed countries, the problem has become one of over-production and because of world trade agreements heavily subsidized products won't be sold aboard. This is actually a good thing for many reasons, most importantly; this excess capacity can be used to break the yolk of foreign dependency on oil.

The Department of Energy (DOE) and USDA estimate that 1/3 of all U.S. gasoline consumption can be replaced by bio-fuels. Based on existing technology there is strong evidence that all of U.S. gasoline consumption can be replaced by bio-fuels. Conservatively, there are approximately 52 million acres of cropland that could be plowed back to solve the energy problem.

In consideration of environmental sustainability and energy balance, how much energy can be delivered to the consumer verses the amount of fossil fuel used? Corn ethanol and cellulosic ethanol are transitional; the real advantages are found in perennial plants such as Switchgrass:

- No tillage for 10 years after first planting
- Long-lived roots establish symbiotic interactions with bacteria to acquire nitrogen and mineral nutrients.
- Some perennials withdraw a substantial fraction of mineral nutrients from above-ground portions of the plant before harvest.
- Perennials have lower fertilizer runoff than annuals.
- Switchgrass has 1/8 nitrogen runoff and 1/100 the soil erosion of corn.

We can make these plants drought and pest resistant. These plants can make their own fertilizer and use far less water and can then be converted to biomass. Ultimately, the economics of bio-fuels will be governed by the availability of water and sunlight.

The Lawrence Berkeley Laboratory would like to become the major center for renewable energy research and technology. The Laboratory wants to be sited for taking full advantage and harnessing all available tools at all other national science facilities. The major issue is how to get the enthusiasm of the scientist as was done in Los Alamos during the Manhattan project. This will be accomplished by top scientists who don't have their ego in front of everything else, who take a bold approach, recognize failure quickly, and move on to other opportunities to resolve energy issues for the future.

(7) COMMENTS FROM THE PUBLIC

(8) CLOSING COMMENTS AND ADJOURNMENT

With no further business before the Board, the meeting was adjourned at approximately 5:00 p.m.