



Berkeley Energy Commission

ENERGY COMMISSION AGENDA

Wednesday, March 23, 2016

North Berkeley Senior Center

1901 Hearst Street

6:30 P.M.

1. Call to Order and Roll Call
2. Public Comments and Announcements

Action Items

3. Review and Approval of 2016 Priorities
4. Approval of Minutes from Last Meeting
5. Discussion and Possible Action on Carbon Fee and Dividend Policy
6. Approval to Authorize Commissioner Camacho to Author a Commission Report on Community Choice Aggregation

Information Items

7. Report Back from Commissioner's Meetings with their Council Members
8. Presentation on the Solar Plan Subcommittee
9. Reports from Assigned Commissioners
 - Camacho - Community Choice Aggregation and Carbon Fee and Dividend
 - Wang – Solar Plan
 - Schlachter – Electric Vehicles and Point-to-Point Car Sharing
 - James - Industrial Efficiency
 - BESO - unassigned
10. Report on California Energy Commission Advanced Energy Communities Grant Application
11. Report on Community Choice Aggregation
12. Report on Building Energy Saving Ordinance (BESO)

Action Items

13. Items for Next Month's Agenda
14. Adjournment

Action may be taken on any item if moved to the Action section of the agenda at the request of a Commissioner. If Commissioners are unable to attend, please call Neal De Snoo, at the Energy Office, 981-7439, by 4:00 p.m., March 23, 2016.

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Berkeley Energy Commission

ENERGY COMMISSION MINUTES
Wednesday, February 24, 2016
North Berkeley Senior Center
1901 Hearst Street
6:30 P.M.

1. Call to Order and Roll Call

The meeting was called to order by Commissioner Murray at 6:30 PM.

Present: Bell, Bernhardt, James, Murray, Myers, Schlachter, Wang

Absent: Camacho, Constantine

Leave of Absence: None

Staff: Neal De Snoo, Billi Romain, Caytie Campbell-Orrrock, Molly Culton, Kamala Park

Guests: Milt Latta, Elyce Klein, Mary Selkirk, Harry Chomsky, Tom Yamaguchi (Citizens' Climate Lobby)

Public: Tom White, Erin Diehm, Amy Dao

2. Public Comments and Announcements

Erin Diehm expressed interest in the progress of the solar plan.

Action Items

3. Approval of Minutes from Last Meeting

The minutes were approved (MSC: JJ, AB, 5-0-2, MM, KW absent).

Information Items

4. Report on the Building Energy Saving Ordinance

Billi Romain provided a progress report on the BESO ordinance and directed the commission to a report in the packet.

5. Discussion of Carbon Fee and Dividend Policy

The Commission discussed the proposal with representatives from the Citizens' Climate Lobby.

6. Reports from Assigned Commissioners

- Camacho - Community Choice Aggregation and Carbon Fee and Dividend
See item 9.
- Wang – Solar Plan
Commission Wang reported that the team has prepared some preliminary analysis of the potential and identified sites for municipal projects.

- Schlachter – Electric Vehicles and Point-to-Point Car Sharing
See item 10.
 - James - Industrial Efficiency
Commissioner James reported that he and Commissioner Camacho visited Pacific Steel. They expressed interest in solar and energy storage.
7. Reports on Zero Waste Commission (Murray), Public Works Commission (James), Community Environmental Advisory Commission (Schlachter), Transportation Commission (Wang), Planning Commission (Bell), and City Council (DeSnoo)
No reports.
8. Report on State Energy Policy
No report.
9. Report on Community Choice Aggregation
Staff reported that a community workshop is scheduled for May 14. Staff reported that the County is seeking Council adoption of an ordinance establishing a joint powers authority in the early Fall.

Action Items

10. Discussion and Possible Action on Recommendation on a Point-to-Point Car Share Program
The Commission decided to not take a position on the proposal (MSC: JJ, MM, 5-0-2, KW, AM abstained).
11. Election of Officers
Commissioner Camacho was elected chair (MSC: JJ, AB, 7-0). Commissioner Myers was elected vice chair (MSC: JJ, AB, 7-0).
12. Items for Next Month's Agenda
Discussion and Possible Action on Carbon Fee and Dividend will be added to the regular agenda.
13. Adjournment
The meeting adjourned at 8:57 PM (MSC: JJ, AB, 7-0).

MEMORANDUM

March 4, 2016

To: Berkeley Energy Commission

From: Anthony Bernhardt, Commissioner

Subject: Citizens Climate Lobby proposal

Too Many Moving Parts – Don't Just Do Something; Stand There

Citizens Climate Lobby (CCL) has requested that the City of Berkeley support an effort to pass a national carbon tax to address global warming caused by greenhouse gas (ghg) emissions, notably carbon emissions associated with combustion of fossil fuels.

The Commission agrees that it is essential to reduce ghg emissions as quickly as possible. The City and the State of California have taken action to reduce such emissions. 26 states have mandatory renewable portfolio standards to reduce emissions in the electricity sector. 8 more states have voluntary renewable energy standards or targets. The Federal Government, following California, has the CAFÉ standard to reduce emissions from motor vehicles. It should be noted that over 80% of emission reductions are obtained from such regulatory actions.

To reduce emissions, including from the unregulated portions of the economy, a price on carbon could be effective. There are two ways this has been done: a tax on carbon such as in British Columbia or a cap on emissions such as in California. CCL is advocating a national tax and rebate system in which carbon tax revenues are distributed in equal measure to U.S. citizens. This system has the virtue that a tax is administratively simple and that spending is transparent and politically attractive. On the other hand, allocation of revenues to programs that further reduce ghg emission, such as we do in California, would accelerate progress. If there is more revenue than can be effectively applied to R&D and deployment of ghg reduction measures, then allocating revenues to reduction of 'distortionary' taxes such as the personal income tax (which discourages labor) or the corporate income tax (which discourages capital formation and private investment) is a more economically efficient use of revenues.

However, the question posed to the Commission by CCL might be, "Isn't it better to have a tax and rebate program than no national program to reduce emissions from unregulated parts of the economy?" The Commission's answer should be "no.....at least not now"

While CCL argues that tax should begin at \$15 per ton of CO₂ and increase by \$10 per year, that is not what the Congress is likely to pass. It might agree to a tax \$15 per ton of CO₂ but without annual escalation. Oil companies have said that they favor a carbon tax because it removes a significant uncertainty in their business. From their point of view \$15 per ton of carbon translates to an increase of about 17 cents per gallon of gasoline and, as we well know, 17 cents a gallon will reduce gasoline consumption negligibly. Likewise, other emitters will not change their energy use for so small a tax penalty. (A carbon tax does make sense in the context of overall tax reform when these tax revenues replace distortionary taxes, as mentioned above, the economy benefits, but that is a different from solving the ghg emissions problem.)

The question, then, is “what is the right level of tax.” When gasoline cost more than \$4 per gallon, SUV and light truck sales went down and fuel-efficient vehicle sales went up. Vehicle miles traveled went down. Clearly \$4 per gallon alters behavior. That translates to about \$360 per ton of CO₂. This may sound like a big number but in Germany fuel costs have varied between \$3 and \$6 per gallon for the last 35 years and their economy has been strong throughout with the exception of the recent global recession.

The idea of increasing the carbon tax by \$10 per ton of CO₂ each year is better than the flat tax, but it will take until 2051 (if we start in 2016) to reach the ‘we know it will work’ level of \$360 per ton of CO₂ and that represents a lot of time lost and emissions not avoided.

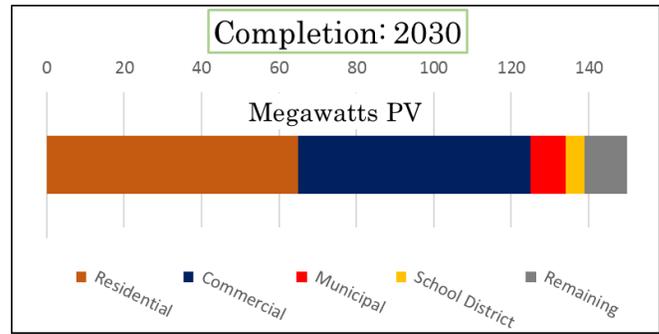
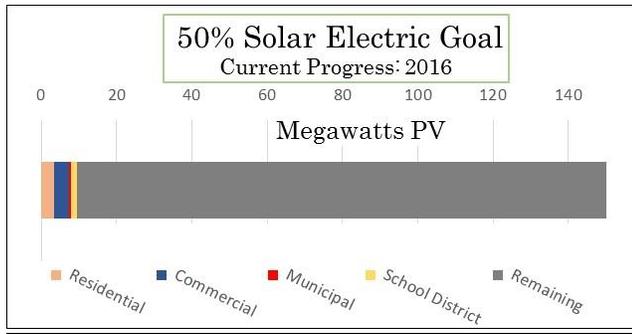
The virtue of a cap and trade (C&T) system like California has, is that the price of carbon is determined automatically by the lowest cost it takes keep emissions below the cap. It is indeed a more complicated system to administer but that may in fact be the direction in which the world is moving:

- 28 EU countries, plus Norway, Lichenstein and Iceland, participate in the European cap and trade system.
- 9 northeastern and mid-Atlantic states participate in a C&T system, RGGI, that covers electricity generation.
- One Canadian province, Quebec, has an economy-wide C&T system that is linked with the California trading system. As a result of the October election, Manitoba and Ontario are creating C&T systems and British Columbia is likely to convert their tax to C&T so all those Canadian provinces can minimize their cost of ghg reduction together with California. Can Oregon and Washington be far behind?
- The President’s Clean Power Plan will require states to reduce ghg emissions in the electricity sector. There are a number of ways that utilities and states can accomplish their reduction goals but there is significant inducement in the plan for states to collaborate. The result is likely to be regional reduction plans based on mass-based (tons of CO₂) emission trading.

From this basis it is logical that caps and markets will be harmonized and extended nationally and internationally.

So why do we want to confuse the situation by imposing a tax on top of the state and provincial preference for a pricing system that reduces emissions by known amounts on an effective time schedule in an economically efficient manner?

Solar Plan Update



Draft Structure of City of Berkeley Energy Commission Solar Plan

SECTION 1. PROJECT BACKGROUND (page 1)

- Climate action plan/AB 32 / SB350
- Resolution No. 67,009–N.S.
- Benefits, Co-Benefits, and Risks
- Identifying Stakeholders: City, Schools, Residents, Businesses, EBMUD, EBRPD

SECTION 2. TECHNICAL FEASIBILITY (page 2 -3)

- Quantifying the 50% goal – kWp (150MW)
- Energy Storage Feasibility
- Mapping the resource and measuring coverage area (sq-ft)
 - ❖ 6 Zones, 10 sample blocks per zone, margin of error $\pm 5\%$
- Required average kW per structure
 - ❖ Residential: 2-10 kW
 - ❖ SMBs: 10-100 kW
 - ❖ Commercial, District, Municipal: 100-400 kW
- Participation allocation by class
 - ❖ Residential: 30% participation (1,500 of 45,000 total sites)
 - ❖ SMBs: 66% participation (3,000 of 4,500 total sites)
 - ❖ Commercial, District, Municipal: 66% (100 of 150 total sites)

SECTION 3. PROJECT COST & GHG ECONOMICS (page 4)

Phase I: All projects that can be done at economic advantage; cash flow positive

- PPA
- Subsidized federal bonds
- Low Hanging GHG

Phase II: Remaining projects that are revenue neutral or justifiable by \$ per GHG

- Secondary market for solar surplus
- Green bank / municipal loan guarantee redistribution

SECTION 4. POLICY & OUTREACH OPTIONS (pages 5 - 10)

- CCA Transition Team
 - ❖ Technology / project development expert
 - ❖ Power pricing consultant / subject expert for oversight of energy swaps
 - ❖ Part-time legal council
 - ❖ Analyst / interns / polling data
 - ❖ Policy, Municipal finance, Solar zoning czar
- CCA Objectives
 - ❖ Baseline 100% renewable at PG&E price point match – thus requires opt down to 50%
 - ❖ Hybrid model: “Not all eggs in one basket” - CCA is a fallible entity with lengthy decision making; more desirable to include solar diversification
 - ❖ CCA rules should encourage internal wheeling
- Administrative Regulations and Procedures
 - ❖ Tree height - relocation through attrition
 - ❖ Internal Municipal Permit Streamlining
 - ❖ Zoning Improvements
 - ❖ Berkeley energy partnership
 - City + BUSD + EBMUD

- Prizes, Challenges, Grants
 - ❖ ZNE neighborhood challenge / Community energy clubs
 - ❖ Legacy projects “How will you be remembered Mr. Gates”
 - ❖ “Buy a brick” donation based social recognition fund raising
 - ❖ Public support campaign for climate action fifty-percent goal
 - ❖ Planning groups campaign: Sierra Club, Respiratory Health Coalition, Clean Tech, American Lung Association
 - ❖ Labor groups? (IBEW / nurses’ union)
 - ❖ Chamber of Commerce and Building Industry Association

- Cost Reductions, Tax Incentives
 - ❖ Bulk Procurement
 - ❖ Tax strategy manual
 - ❖ Solar lab - Essential research and innovation
 - ❖ Explore the formation of community solar at larger local sites 400kW+
 - ❖ Ownership by residents at warehouse sites
 - ❖ Solar garden tax benefits for individual investors (35 max per project)

- Political Influence at State Level
 - ❖ Smart inside-of-government advocates to overcome institutional barriers
 - ❖ Coalition: environmental, business, and labor groups, community organizations -- forced needed changes to Public Utility Code.
 - ❖ Need for micro-grid labor union?
 - ❖ Ask for rewards/incentives for cities that contribute to success of State of California climate policies; provide a stick when these municipalities fail to act.

Caution Against Simplistic View of Energy Markets

from Christopher Weare: California Energy Crisis Policy Review

Revelations of Enron trading strategies highlighted faulty market design that left the transmission market vulnerable to manipulation. In one strategy, for example, Enron played California's market against regulated transmission in a bordering state. It would claim to ship energy in California counter to the direction of congestion, thereby collecting payments for congestion relief. It would then sell that power back to the original location through regulated transmission in neighboring states. No net energy was moved or congestion relieved, but Enron profited from the spread between California congestion payments and tariffed transmission charges.



CCA Development/Expansion

Alameda County	Moving ahead; technical study underway with plans for the item to go back to the BOS in June for funding and implementation phase approvals. Targeting spring or summer 2017 launch.
Humboldt County (Redwood Coast Energy Authority)	Received four bids for managed service. Selection process underway. Considering a spring 2017 launch
City of San Jose	CCA item passed out of committee; Council to consider next steps on March 1 with potential for managed service model RFP out in the fall.
Silicon Valley Clean Energy - Santa Clara County and cities	11 cities and the county have passed CCA resos and ordinances thus far. One remaining city upcoming. March 31 deadline. RFQ out for interim director position; deadline is March 7th.
Peninsula Clean Energy - San Mateo County	All 20 cities passed ordinance and JPA resolution -- unanimous votes! Next: Banking partner(s), Executive Search, Data Management RFP. October 2016 launch
Lake County	Issued RFP for full range of CCA development and program operation services February 1. Responses due March 11, 2016
City of Davis/Yolo County	Technical analysis complete; Item to return to City Council on March 8th
Santa Barbara, Ventura, SLO Counties	Advisory Committee underway; 2 bids for technical study under review
Contra Costa County	County considering a technical study to either form their own program, join MCE, or consider joining forces with Alameda. 16 cities agreed to release load data. MCE has set deadline of March 31 for new cities or the county to join them.
Monterey Bay Tri-Counties (Santa Cruz, Monterey, San Benito)	Tech study out this week. Return to Santa Cruz County BOS in March/April for Phase II authorization. Public outreach soon underway.

CCA FEASIBILITY STUDY FOR ALAMEDA COUNTY *STATUS UPDATE*

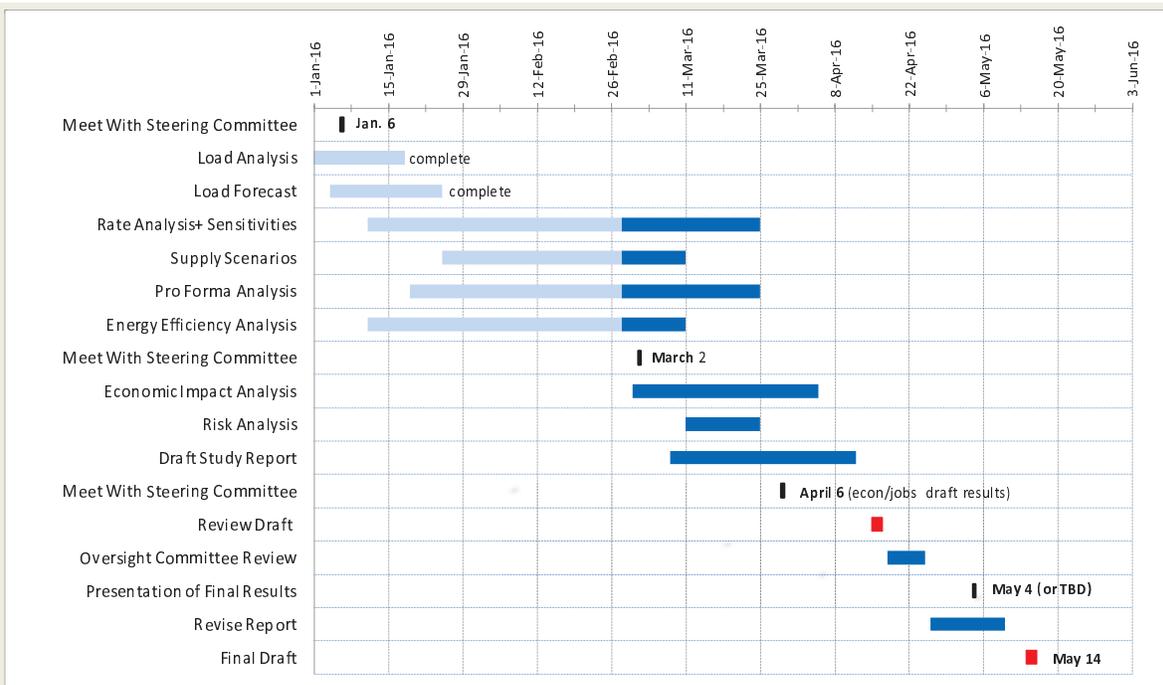
MARCH 2, 2016

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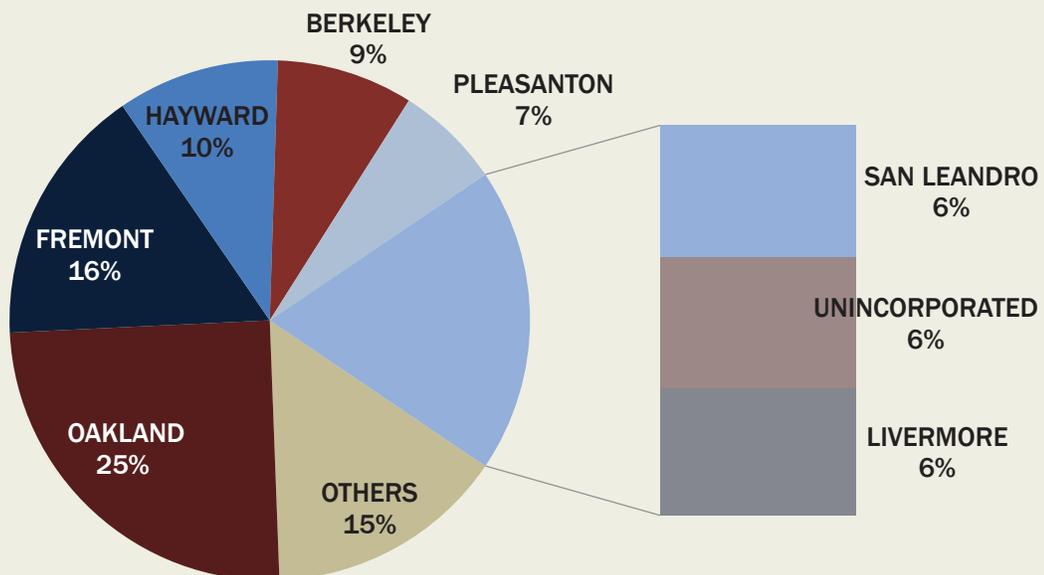
SCHEDULE



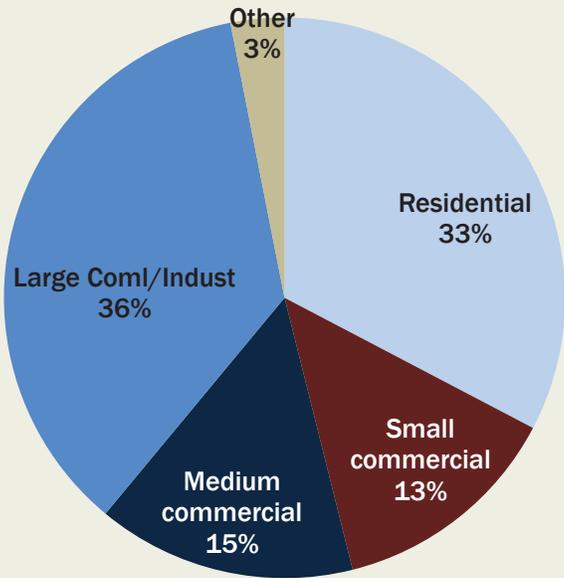
ALAMEDA CCA WILL BE LARGE

CCA	Sales (GWh)
Alameda	~6,500
San Francisco	3,500
San Mateo	3,300
Marin	1,800
Sonoma	2,100
Lancaster	

LOAD BY JURISDICTION



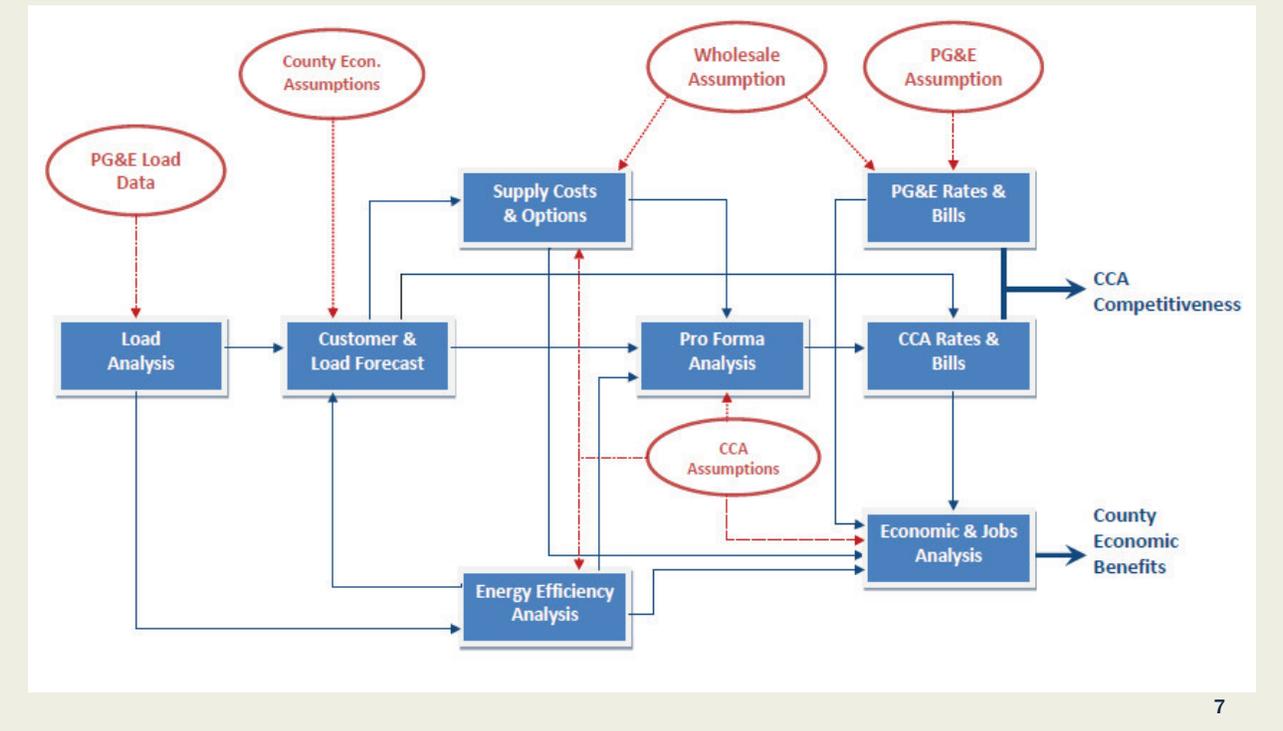
LOAD BY RATE CLASS



LARGEST USERS BY CLASS/ JURISDICTION

Residential	Commercial	Lrg. Com'l + Industrial
Oakland	Oakland	Oakland
Fremont	Fremont	Fremont
Unincorporated County	Hayward	Berkeley

ANALYSIS MAP



CCA PROCUREMENT REGULATORY REQUIREMENTS

MARCH 2, 2016

Mark Fulmer

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REGULATORY REQUIREMENTS

- Renewable Portfolio standards
- Resource Adequacy Requirements
- Energy Storage Requirements
- Additional Requirements from SB 350

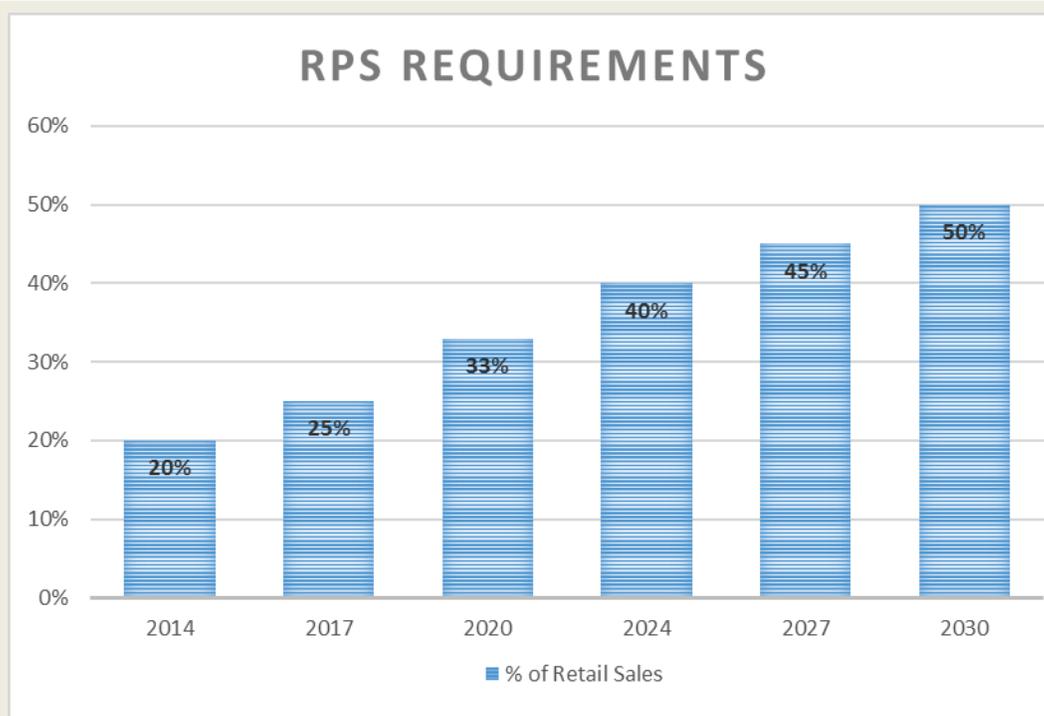
RPS REQUIREMENTS

- **SB 1078 in 2002: 20% renewables by 2017**
- **SB 107 in 2006: 20% by 2010**
- **SB 2 in 2011: 33% by 2020**
- **SB 350 in 2015: 50% by 2030**

Sources: <http://www.energy.ca.gov/renewables/>;
<http://programs.dsireusa.org/system/program/detail/840>

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RPS REQUIREMENTS



4

RPS ELIGIBLE SOURCES

Eligible Without Qualification	Eligible Subject to Criteria	Ineligible
Solar	Fuel Cell	Large Hydroelectric
Tidal Current	Small Hydroelectric	Nuclear
Wind	Conduit Hydroelectric	
Ocean Thermal/Wave	Water supply/conveyance	
Biodiesel	Incremental Hydroelectric	
Biomass	Municipal Solid Waste	
Biogas		

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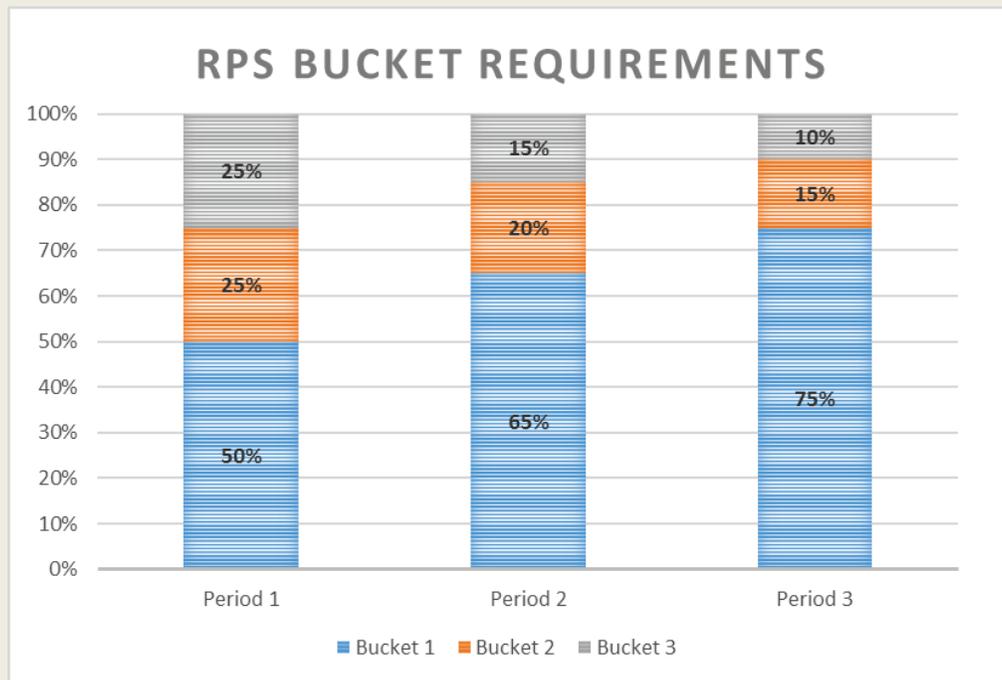
PORTFOLIO CONTENT CATEGORIES

3 content categories or “buckets” for RPS sources

- **Bucket 1:** Renewable Energy delivered in California
- **Bucket 2:** Equal amount of energy and RECs, but not necessarily at the same time but on a specified schedule
- **Bucket 3:** Unbundled RECs

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BUCKET REQUIREMENTS/LIMITATIONS



7

RESOURCE ADEQUACY (RA)

- **System RA:** Generation equal to total load forecast + 15% planning reserve margin
- **Local RA:** Generation equals to total load forecast for a particular constrained region (Bat Area)
- **Flexile RA:** (New) how quickly the power plants can ramp up or down.

RA FILING REQUIREMENTS

- **Annual filings:**
 - **90% of System RA for the upcoming summer**
 - **100% of Local RA and 90% of Flexible RA for each month of the coming year**
- **Monthly filings:**
 - **100% of System RA obligation**
 - **100% of Flexible RA obligation**
 - **Revised Local RA obligation for May-December**

Source: <http://www.cpuc.ca.gov/RA/>

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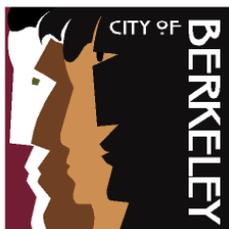
ENERGY STORAGE

- **Established by AB 2514 (2013)**
- **Requires:**
 - **Storage projects to meet 1% of peak load**
 - **Contracts by 2020**
 - **In place by 2024**

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SB 350 REQUIREMENTS FOR CCAS

- 5-year renewable energy procurement plan
- Annual compliance report that includes:
 - Current status and progress made in prior year towards RPS procurement
 - Recommendations to remove impediments to achieving RPS goals



Office of Energy and Sustainable Development

March 23, 2016

To: Berkeley Energy Commission
From: Billi Romain, Sustainability Program Manager
Subject: Amendments to Building Energy Saving Ordinance (BESO)

INTRODUCTION

This report summarizes proposed amendments to the BESO to delay implementation of the commercial and multifamily building phase in by 8 months.

BACKGROUND

The on-line BESO compliance system, which was supposed to go-live on October 9, 2015, has been delayed. Staff is currently processing the time of sale compliance forms using an interim manual system. The City's IT Department will be going out to contract for software services which will include BESO in the next month. Staff is proposing amending the ordinance to change the due date for large buildings from October 9, 2016 to July 1, 2017 to correspond with new delivery dates for the on-line system.

A scope of work and schedule to deliver the on-line system by October 2016 is being developed, see proposed schedule below. This would allow 8 months for the largest building owners (50,000 sf ft or more) to register their buildings and complete the energy assessments and ENERGY STAR benchmarking by July 1st, 2017. There are approximately 75 buildings in this first reporting cycle. The subsequent phase in schedules for medium and small buildings would also be delayed eight months so that all buildings were on a July 1 schedule cycle.

Proposed Schedule for On-Line Compliance Process - ACCELA Contract Amendment

Phase 1 On-Line Building Registration, Application and Payment, October 2016.

Phase 2 On-Line Energy Report Submission and Building Status Look-up, June 2017.

Phase 3 Compliance and Enforcement Processing and Building Status Report Out, October 2017.

Additional proposed amendments include streamlining reporting for medium buildings to align with small buildings from every 8 years to 10 years and providing a 10 year deferral for new construction rather than an exemption.

CONTACT PERSON

Billi Romain, Sustainability Program Manager, Planning and Development, 510.981.7432