



Berkeley Energy Commission

ENERGY COMMISSION AGENDA

Wednesday, December 7, 2016

North Berkeley Senior Center

1901 Hearst Street

6:30 P.M.

Preliminary Matters

1. Call to Order and Roll Call
2. Public Comments and Announcements
3. Approval of Minutes from Last Meeting (10/26/16)

Discussion and Action Items

4. Energy Services for Disadvantaged Communities (Martin Bond)
 - Presentation - 10 minutes
 - Q & A and discussion of potential work plan deliverable - 10 minutes
5. Building Energy Saving Ordinance – staff
 - Presentation of data and outcomes to date - 10 minutes
 - Q & A and discussion - 10 minutes
6. Report on Climate Action Plan Implementation – staff
 - Review presentation to Council Meeting from 11/14/16 - 5 minutes
 - Q & A - 5 minutes
7. Council Referral on Phasing Out Natural Gas
 - Review Referral and discuss response – 10 minutes
8. Berkeley \$100 million Infrastructure Bond (Measure T1)
 - Review bond text and discuss - 10 minutes
9. Discussion on Energy Commission Work Plan for 2017
 - Review, discuss, identify lead commissioners and consider adoption – 20 minutes
10. Items for Next Month's Agenda:
 - Alameda County Community Choice Energy – Timothy Burroughs and Tom Kelly
 - Bond planning and recommendations – Timothy Burroughs
 - Review Work Plan with incoming commissioners

Communications

None

Late Communications

- Climate Action Coalition and CCA presentation provided at 10/26/16 meeting

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 Billi Romain, at the Energy Office, 981-7432, by 4:00 p.m., 12/07/16.

All agenda material may be examined at the Reference Desk, of the Main Library, located at 2090 Kittredge, or the West Berkeley Branch Library, 1125 University Ave., during regular library hours.

To request a meeting agenda in large print, Braille, or on cassette, or to request a sign language interpreter for the meeting, call 981-7439 (voice), or 981-6903 (TDD), with at least five (5) working days notice to ensure availability. Disabled access is at the front door. Ring bell for staff to open door. If you need other assistance, please call Billi Romain, at 981-7432, by 4:00 p.m., 12/07/16.

 This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services Specialist, at 981-6342 (V), or 981-6345 (TDD), at least three (3) business days before the meeting date. Please refrain from wearing scented products to this meeting.

Communications to Berkeley boards, commissions, or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to a City board, commission, or committee, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service, or in person, to the secretary of the relevant board, commission, or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission, or committee for further information.

Please refrain from wearing scented products to the meeting.



Berkeley Energy Commission

ENERGY COMMISSION MINUTES

Wednesday, October 26, 2016

Preliminary Matters

1. Call to Order and Roll Call

The meeting was called to order by Commissioner Myers, at 6:45 p.m.

Present: Murray, Myers, Bell, James, and Bernhardt

Absent: Constantine, Jiang,

Leave of Absence: Schlachter

Staff: Billi Romain

Guest: Rebecca Milliken, Ecology Center, Barbara Stebbins, Climate Action Coalition

Public: Tom White, Byron Paktor, Josiah Johnston

2. Public Comments and Announcements

None.

3. Approval of Minutes from Last Meeting (September 28, 2016):

Motion/second to approve the minutes from the September 28th Energy Commission meeting (James, Bell). The motion carried 5-0-0-2 (Ayes: Bell, Bernhardt, James, Myers, and Murray. Noes: None. Abstain: None. Absent: Constantine, Jiang).

Discussion and Action Items:

4. Discussion of existing Rooftop Solar policies and ordinance:

Commissioners reviewed handouts summarizing mandatory solar policies and expressed concern that the impact of the CEC model ordinance, requiring solar for new low-rise and single family buildings, would not be significant. No Action.

5. Report on Community Choice Energy:

Rebecca Milliken, Ecology Center, provided overview of the Berkeley Climate Action plan activities, including the work of the CCA subcommittee. Commission would like to discuss how they influence CCE policy in next meeting. No Action.

6. Methane Leakage in Natural Gas Distribution lines – Commissioner Myers:

Motion/second to recommend Berkeley sign up an observing city for the USDN study of methane leakage. (Bernhardt, Murray). The motion carried 5-0-0-2 (Ayes: Bell, Bernhardt, James, Myers, and Murray. Noes: None. Abstain: None. Absent: Constantine, Jiang).

7. Report on Climate Action Plan Implementation:

No Action.

8. Discussion on Energy Commission Work Plan for 2017 :

Draft work plan was reviewed. An electronic version will be distributed to commissioners with request for comments back by November 14th with revised version considered for approval at the following meeting.

9. Items for Next Month's Agenda:

- Energy Services for Disadvantaged Communities (Martin Bond)
- BESO
- CCA
- Parking requirements
- Work plan

Communications:

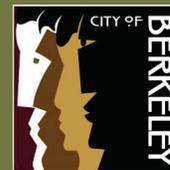
- None

Late Communications:

- Presentation on Berkeley Climate Action Coalition and CCA

Adjournment:

Motion/second to adjourn at 8:55 p.m. (James, Myers). Motion carries 5-0-0. (Ayes: Murray, Myers, Bell, James, and Bernhardt)

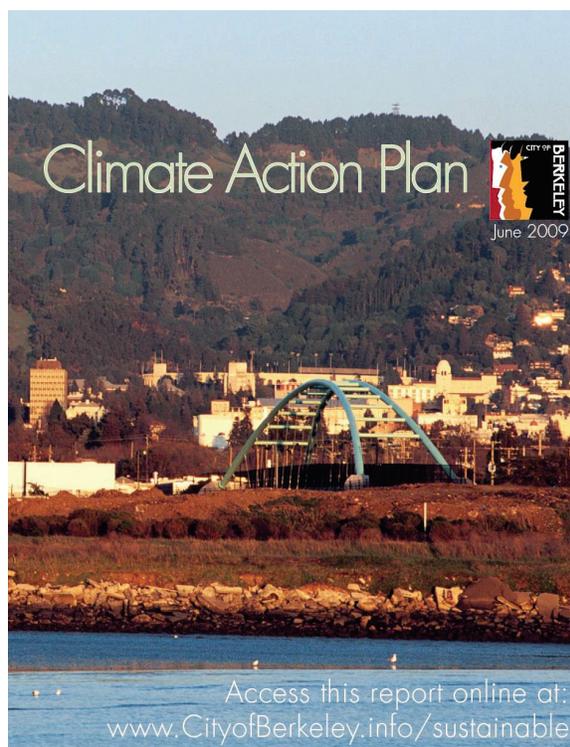


OFFICE OF ENERGY AND SUSTAINABLE DEVELOPMENT

Timothy Burroughs, Assistant to the City Manager

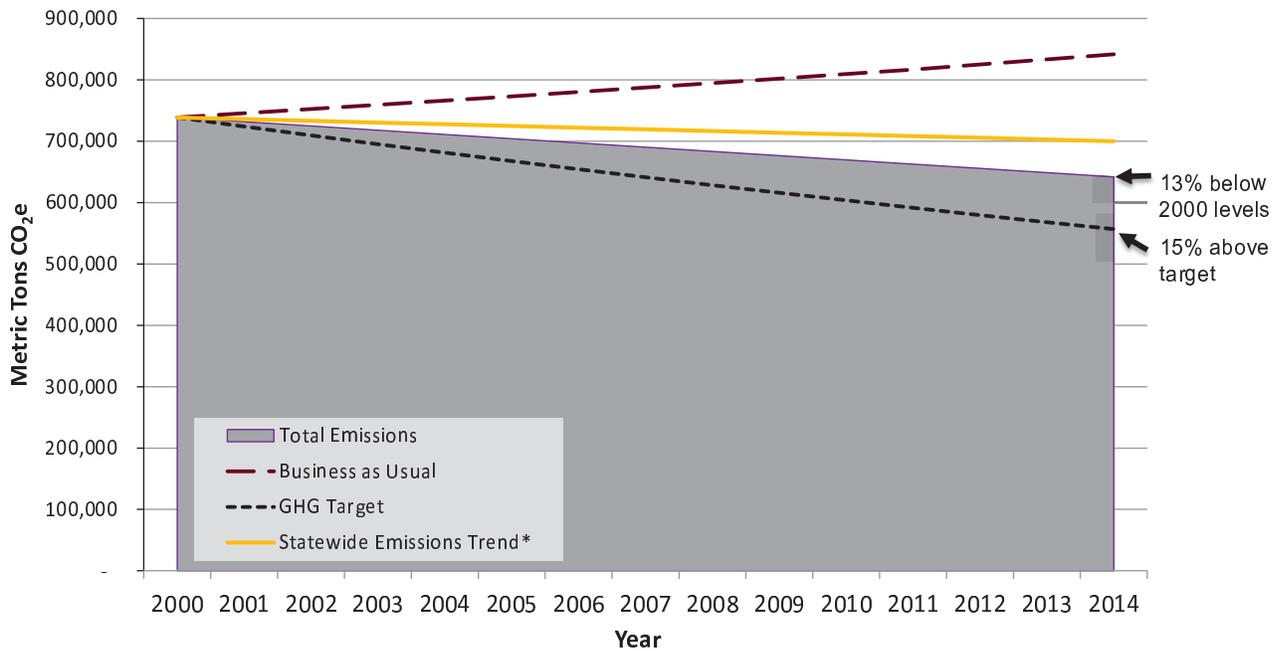
33% Reduction
below 2000
levels by 2020

80% Reduction
below 2000
levels by 2050



COMMUNITY-WIDE GREENHOUSE GAS TARGET & TREND

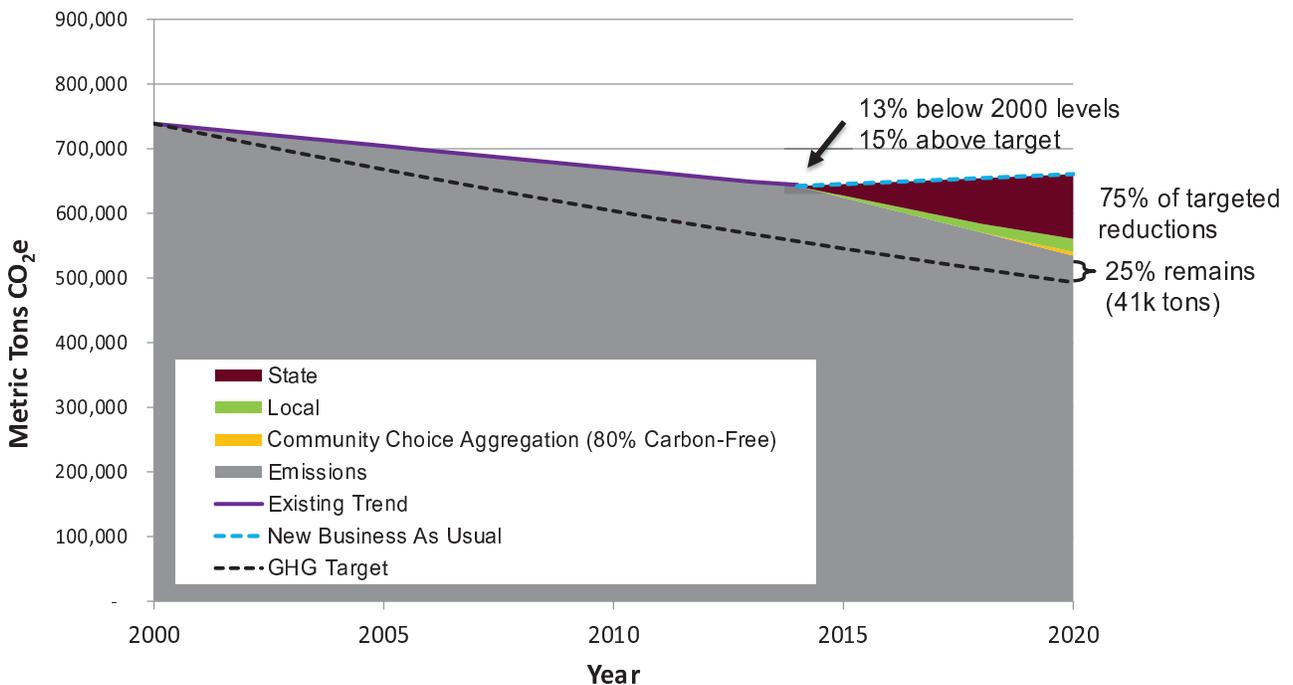
EMISSIONS DECREASED 13% FROM 2000-2014



*State trend line depicts a trend only and not actual quantity of emissions.

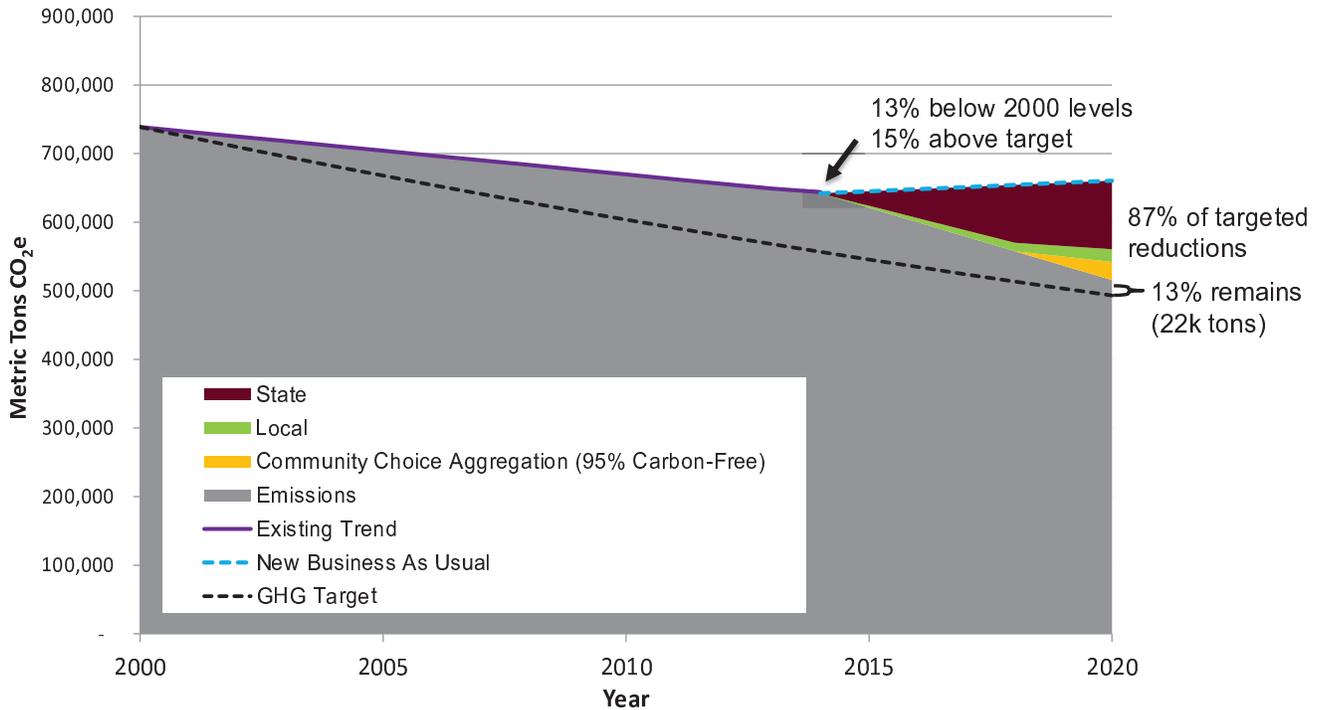
PROGRESS IS BEING MADE, BUT ADDITIONAL REDUCTIONS ARE REQUIRED TO ACHIEVE 2020 TARGET

Scenario 1: Community Choice Aggregation (80% Carbon-Free)



PROGRESS IS BEING MADE, BUT ADDITIONAL REDUCTIONS ARE REQUIRED TO ACHIEVE 2020 TARGET

Scenario 2: Community Choice Aggregation (95% Carbon-Free)



LOCAL STRATEGIES DESIGNED TO ACCELERATE EMISSION REDUCTIONS



Use less (and cleaner) energy:

Building Energy Saving Ordinance (BESO)

Community Choice Aggregation (CCA)

Center Street Garage Microgrid Project

Improvements to municipal buildings



Reduce driving and use cleaner fuels:

- Transit oriented development
- Bike and pedestrian infrastructure
- Parking and transportation demand management (goBerkeley)
- Electric vehicle (EV) infrastructure

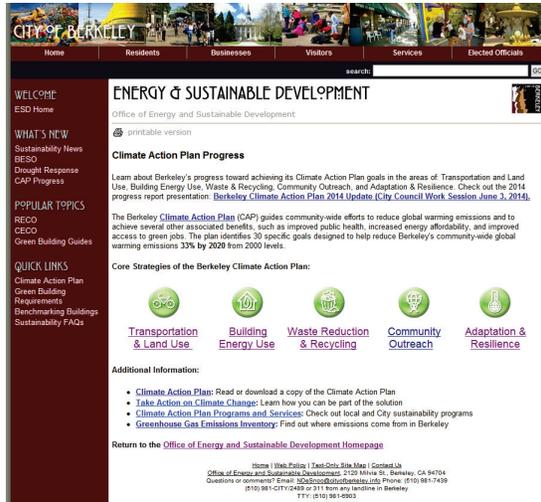


Zero Waste:

- Requiring new multifamily buildings and businesses to locate and size space to support recycling composting
- Optimizing recycling and composting services for municipal facilities, residents, and businesses

Community Climate Action

- **Stay informed** with the City website:



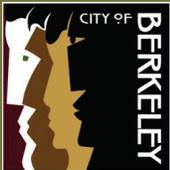
www.cityofberkeley.info/climateprogress

- **Get involved** with local community organizations

- Berkeley Climate Action Coalition



<http://ecologycenter.org/climatecoalition/>



MAIN TAKEAWAYS

BUILDING SAFETY –

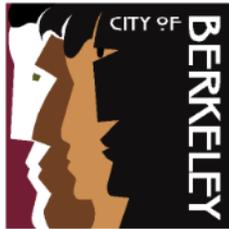
- **Technology Challenges** have impacted turnaround times, but have allowed for more self-service and elimination of paper
- **Permit Volumes** continue to increase as land use entitlements proceed to construction phase spurred by increased housing prices

CLIMATE ACTION -

- Berkeley has achieved **significant emissions reductions** despite population increase
- A **“gap”** remains between reductions from existing & planned efforts and reductions needed for 2020 target
- Staff is advancing a range of **high-priority strategies** to fill the “gap”

CUSTOMER SERVICE –

- **Customer Service Initiative:** Develop Shared Values, Establish Performance Expectations, Demonstrate Appreciation, Improve Communication
- **Operational Strategy:** Budget, Staffing, Training and Technology



[Commission Name]

Item 7
December 7, 2016

10

CONSENT CALENDAR
November 1, 2016

To: Honorable Mayor and Members of the City Council
 From: Community Environmental Advisory Commission (CEAC)
 Submitted by: Ben Gould, Chairperson, CEAC
 Subject: Phasing Out Natural Gas for Heating and Cooking

RECOMMENDATION

Direct the Community Environmental Advisory Commission (CEAC) and the Energy Commission (EC) to develop and evaluate a proposal for requiring installations of new cooking, water heating, and/or building heating systems to use technologies which do not burn natural gas. The proposal should consider an educational component, navigating Title 24 requirements, mitigating increased costs for low-income households, and other challenges with the transition.

FISCAL IMPACTS OF RECOMMENDATION

Some staff time to provide input to commissions on proposal and for educational outreach.

CURRENT SITUATION AND ITS EFFECTS

In Berkeley, natural gas combustion for residential and commercial use (primarily heating, water heating, and cooking) is responsible for 36% of Berkeley's GHG emissions (as of 2005)¹. To achieve emissions reductions goals, emissions from natural gas must be reduced. However, there is no current plan to do so.

The State of California also has no current proposals to address local emissions from natural gas. The State is currently preparing to implement zero net energy requirements for new buildings (residential by 2020, commercial by 2030), but as currently written, net energy is measured in units of energy, without consideration for carbon intensity². New buildings which burn natural gas for heat (or other uses) and generate equal amounts of renewable energy will qualify as zero net energy, despite the emissions associated with burning natural gas.

¹ City of Berkeley. "Berkeley Climate Action Plan"

http://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/BCAP%20Exec%20Summary4.9.09.pdf

² California Energy Commission "Revised Zero Net Energy (ZNE) Definition" 2011

http://www.energy.ca.gov/2011_energypolicy/documents/2011-07-20_workshop/presentations/Revised_Zero_Net_Energy_Definition.pdf

Because buildings remain useful for decades, and heating systems are not readily replaced, even new zero net energy buildings with renewable energy generation could still contribute to Berkeley's greenhouse gas emissions if they burn natural gas.

Carbon-free alternative energy sources are becoming more prevalent. Alameda County is moving to create a Community Choice Aggregation system, which will buy carbon-free energy directly from providers and provide it to Berkeley residents and businesses. Additionally, with the recent passage of SB 32, the State of California is requiring electric utilities to source 50% of their electricity from renewable sources by 2030, meaning that readily available alternatives to natural gas (namely, electricity) will soon have lower associated emissions than burning gas.

On May 12, 2016 the CEAC adopted this recommendation unanimously:
Motion/Seconded by Varnhagen/Amezcuca. Ayes: Gould, Goldhaber, Varnhagen, Kaufman, Lim, and Amezcua. Noes: None. Absent: Camacho, Lynch. Abstain: None.

BACKGROUND

Natural gas combustion for heating and cooking (including water heating) comprises roughly 8% of California's total greenhouse gas (GHG) emissions³. Within the City of Berkeley, natural gas combustion for residential and commercial use (primarily heating, water heating, and cooking) is responsible for 36% of Berkeley's GHG emissions (as of 2005)¹.

The State of California has a goal of an 80% reduction in greenhouse gas emissions (relative to 1990) by 2050. In 2006, 82% of Berkeley voters passed Measure G, setting a similar goal of an 80% reduction in GHG emissions by 2050 (relative to 2000)¹.

Researchers at UC Berkeley have found that significant electrification, including electrification of heating and water heating, is required in order to achieve the state's greenhouse gas emissions target by 2050 (along with a dramatic shift to low-GHG energy)⁴.

It is likely that the State of California will work to support electrification in the next 30 years. However, because natural gas heating, water heating, and cooking makes up such a large part of Berkeley's GHG inventory – and because it is relatively such a small part of the State's overall emissions – the City must act more aggressively than the State in order to achieve its own emission reduction targets.

Lastly, gas-fueled ranges are a significant fire risk, responsible for an estimated 24,000 fires per year, and 160 civilian deaths nationwide (about 7% of all home structure fires

³ California Air Resources Board, "California Greenhouse Gas Emission Inventory – 2015 Edition" 2015.
<http://www.arb.ca.gov/cc/inventory/data/data.htm>

⁴ Wei et al. "Deep carbon reductions in California require electrification and integration across economic sectors" *Environmental Research Letters*. 2013. <http://iopscience.iop.org/article/10.1088/1748-9326/8/1/014038>

and 6% of civilian structure fire deaths)^{5,6}. Preventing their installation can provide additional health and safety benefits to residents.

ENVIRONMENTAL SUSTAINABILITY

Using alternative energy sources to meet the need for heating, water heating, and cooking will improve local air quality and, in the long term, result in lowered GHG emissions. However, in the short term, there may be an increase in GHG emissions as a result of increased electricity use.

RATIONALE FOR RECOMMENDATION

Berkeley's GHG goals are only achievable by reductions in natural gas usage. New installations and construction present an opportunity to prevent emissions from natural gas from growing, and can reduce emissions if they replace former natural gas fired equipment.

ALTERNATIVE ACTIONS CONSIDERED

CEAC considered taking no action to address emissions from natural gas.

CITY MANAGER

The City Manager takes no position on the content and recommendations of the Commission's Report.

CONTACT PERSON

Nabil Al-Hadithy, Hazardous Materials Manager, (510) 981-7460

⁵ National Fire Protection Association, "Home Fires Involving Cooking Equipment" 2015
<http://www.nfpa.org/~media/files/research/nfpa-reports/major-causes/oscooking.pdf?la=en>

⁶ National Fire Protection Association, "Home Structure Fires" 2015
<http://www.nfpa.org/~media/files/research/nfpa-reports/occupancies/oshomes.pdf?la=en>

RESOLUTION NO. – N.S.

AUTHORIZING THE CITY OF BERKELEY TO INCUR BONDED DEBT AND ISSUE A GENERAL OBLIGATION BOND FOR IMPROVEMENTS TO EXISTING CITY INFRASTRUCTURE AND FACILITIES

WHEREAS, this resolution is adopted pursuant to and in conformance with Chapter 7.64 of the Berkeley Municipal Code; and

WHEREAS, the City's existing infrastructure is critical to protecting the public safety and welfare and enabling the residents of Berkeley to have a high quality of life:

- Streets and sidewalks provide for transportation and accessibility for both the general public and public safety personnel.
- Storm drains and green infrastructure projects protect the public from flooding and improve the quality of runoff into San Francisco Bay.
- Senior Centers provide important services for the City's seniors, including educational courses, activities, social support, emergency shelters in disasters, and meals.
- Parks and recreation centers and facilities provide recreational, educational and social opportunities and support for children and families, and recreation centers can also function as emergency shelters in disasters.
- The City's public buildings and other facilities are both important cultural resources in themselves and provide public services to the residents of Berkeley.

WHEREAS, the City's existing infrastructure and facilities, including the types of infrastructure and facilities listed above, are in need of significant repair, renovation, replacement, or reconstruction (the "Improvements") so that the public can continue to benefit from them; and

WHEREAS, existing funds and funding sources are inadequate to pay for the Improvements that are necessary in the short term; and

WHEREAS, the City's existing and future infrastructure is critical to protecting the public safety and welfare; and

WHEREAS, documented existing infrastructure and facility needs substantially exceed \$100,000,000; and

WHEREAS, the City Council has therefore determined that the public interest requires additional funding for the Improvements.

NOW THEREFORE, BE IT RESOLVED by the People of the City of Berkeley that the public interest requires the issuance of a general obligation bond in the amount of \$100,000,000 to fund the Improvements.

BE IT FURTHER RESOLVED the People of the City of Berkeley that:

A. Proceeds of bonded indebtedness shall be used to fund the Improvements. In addition, 1% of the bond proceeds shall be available for functional art integrated into Improvements that are paid for by bond proceeds, as and to the extent determined by the City Council.

B. Each year as part of the budget process the City Manager shall provide to the City Council a comprehensive report of funds received pursuant from any bonded indebtedness authorized by this resolution and how they have been expended in an equitable manner throughout the City, listing all specific projects on which they have been expended.

C. Subcommittees of the Public Works Commission and the Parks and Waterfront Commission shall engage in a robust public process to obtain input, and will jointly report to the City Council on an annual basis regarding projects funded by the bond and bond expenditures.

BE IT FURTHER RESOLVED the People of the City of Berkeley that:

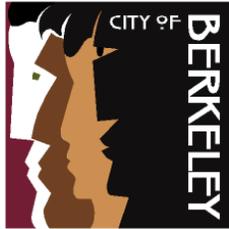
A. The estimated cost of the Improvements to be funded by any bonds issued pursuant to this measure is \$100,000,000, although the total cost of all identified infrastructure and facility needs is substantially in excess of \$100,000,000.

B. The amount of the principal of the general obligation indebtedness (the "Bonds") to be incurred shall not exceed \$100,000,000.

C. The estimated cost may include legal and other fees and the cost of printing the Bonds and other costs and expenses incidental to or connected with the issuance and sale of the Bonds.

D. The proceeds of the Bonds authorized to be issued by this resolution shall be used to finance construction of the Improvements and functional art integrated into the Improvements, to pay any fees and costs in connection with the issuance of the Bonds, including but not limited to, legal fees and bond printing costs.

E. The maximum rate of interest to be paid on the Bonds shall not exceed six percent (6%).



Berkeley Energy Commission

Draft Energy Commission 2017 Work Plan

1. Energy Efficiency Upgrades:

- **Energy Efficiency in Disadvantaged Communities**

Lead Commissioner _____

On-going tracking, consultation and recommendations to Council as needed.

Deliverable: Report on services provided in Berkeley.

Timing: 2017

- **Building Energy Saving Ordinance**

Lead Commissioner _____

a. Provide beta user testing for on-line compliance system

b. Track integration with energy efficiency programs and conversions from energy assessments to upgrades

c. Review preliminary data for evaluation and make recommendations for program improvement in preparation of evaluation for council in 2018

Deliverable: Feedback on testing and evaluation and recommendations to staff and council

Timing: January 2017 – June 2018

2. Community Choice Energy

Lead Commissioner Myers, Jiang

On-going tracking business model and program launch looking at rates and integration with Berkeley energy policies, climate action plan, and recommendations from the Berkeley Solar Plan. These programs include BESO, community solar, and others.

Deliverable: Comments and recommendations to Council and Berkeley's representative to the JPA.

Timing: The Business Plan will be developed after the JPA is seated in February, the final plan is due 6 months after the seating of the JPA.

3. Mandatory building requirements and reach codes

- **Council Referral on Mandatory Rooftop Solar (9/13/16)**

Lead Commissioner _____

Deliverable: On-going consultation and recommendations as needed regarding implementation of the Berkeley Solar Plan in context of CCE renewable energy standards.

Timing: On-going 2017

- **Scoping and cost benefit analysis of Zero Net Emissions (ZNE) policy**
Lead Commissioner _____
Deliverable: Presentation to the commission on the renewable portfolio standard, the low carbon fuel standard, and other state energy policy. Ask someone from CPUC to come or the CEC to come and present.
Timing: March 2017
4. **Transition from Natural Gas to Electrification**
- **Phasing Out Natural Gas referral**
Lead Commissioner _____
Respond to Council referral for the Community Environmental Advisory Coalition (CEAC) and EC to develop and evaluate proposal for requiring insatlliotn of new cooking and heating technologies that do not use natural gas.
Deliverable: Recommendation to Council
Timing: 2017
 - **Removing barriers replacing gas heaters with electic heat pumps**
Lead Commissioner _____
Deliverable: Comments on permit guide for electric heat pumps
Timing: Summer 2017, and ongoing
5. **Transit infrastructure improvements and policies as they relate to the goals of the Climate Action Plan:**
- **Electric vehicle infrastructure and alternative fuel technologies**
Lead Commissioner Schlachter
Deliverable: Comments on annual report to council including charging station inventory.
Timing: On-going 2017
 - **Evaluating parking requirements**
Lead Commissioner _____
Deliverable: Letter to council, and comments at the Planning and transportation commission
Timing: Oct 2016 – Spring 2017
 - **Encouraging upgrades to bike-ped infrastructure active transit**
Lead Commissioner _____
Deliverable: on-going tracking at other commissions, and making recommendations to Council as needed.
Timing: On-going 2017
6. **USDN methane emission tracking study**
Lead Commissioner _____

Deliverable: Presentation from the working group from Oakland and San Francisco and on-going consultation.

Timing: January 2017 and ongoing

7. Municipal building upgrades and renewable energy installation

- **Recommendations for Measure T1 Infrastructure Bond**

Lead Commissioner _____

Deliverable: Tracking at the Public Works Commission. Make recommendations for energy efficiency, energy security and greenhouse gas reduction.

Timing: June 2017

- **Municipal Energy Efficiency and Renewable Plan**

Lead Commissioner _____

Deliverable: On going consultation and recommendation regarding planning and progress.

Timing: November 2017

- **Micro-grid Berkeley Energy Assurance Transformation (BEAT) Project**

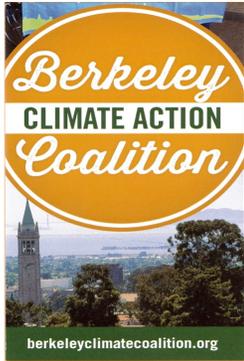
Lead Commissioner _____

Lead Commissioner Constantine, Second Commissioner?

Provide input and guidance on project.

Deliverable: Comments to staff on draft Deliverable for CEC

Timing: May – July 2017



Berkeley Climate Action Coalition

- We are a network of local organizations and community members joining together to help implement the City of Berkeley's ambitious, 40-year Climate Action Plan.
- We initiate projects, influence decision-makers, share information and ideas, collaborate, organize, protest, support solutions, host events, and leverage our collective voice.

www.ecologycenter.org/climatecoalition

Ashby Community Gardens
Bike East Bay
City of Berkeley
Community Energy Services Corporation
East Bay Clean Energy Alliance
Ecology Center
League of Women Voters
NorCal Community Resilience Network
Rising Sun Energy Center
Sierra Club
Transition Berkeley
UC Berkeley
YMCA Youth & Government

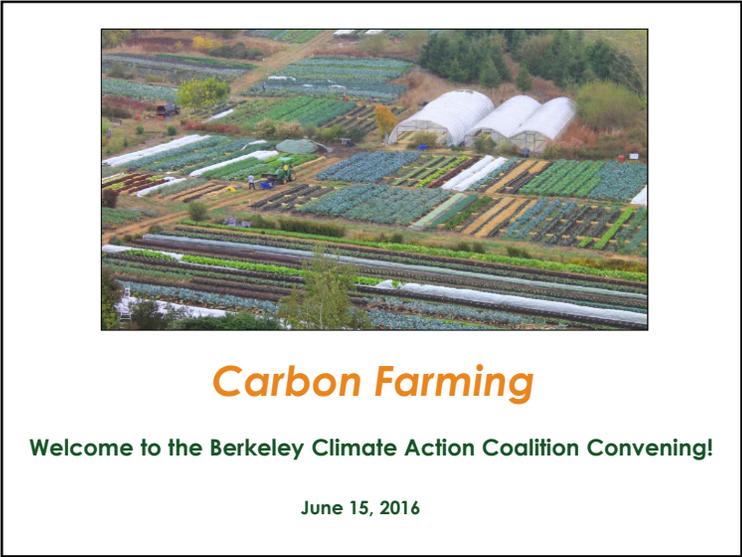
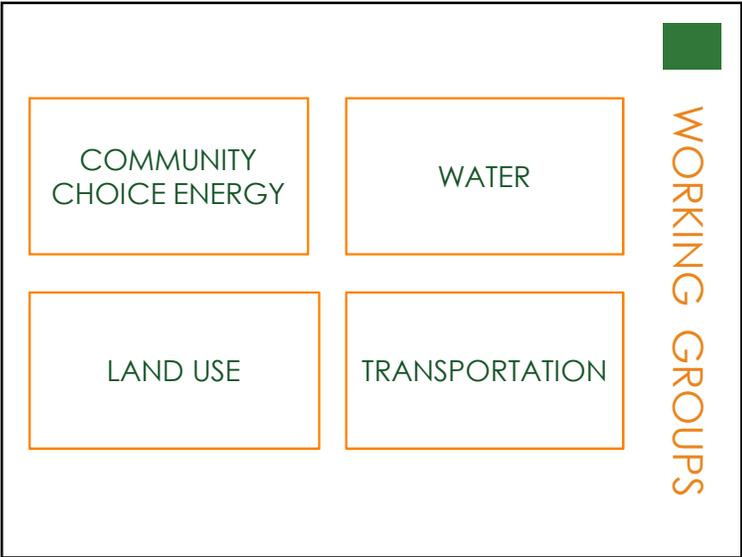
BCAC STEERING



Oakland No-Coal Rally
July 21, 2015

Listserv
Advocacy
Convenings
Networking
Working Groups

BCAC ACTIVITIES





Re-Imagining Water

Welcome to the Berkeley Climate Action Coalition Convening!

March 3, 2016

Build Your Ideal Water-Wise Neighborhood, City, World or Concept
March 3, 2016

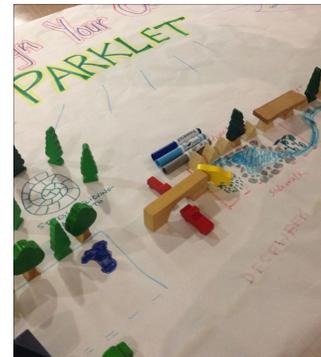


Streets for All

Welcome to the Berkeley Climate Action Coalition Convening!

October 29, 2015

Design Your Own Parklet
October 29, 2015





**Turn on the Action:
Energy Solutions for
State, City & Home**

Welcome to the Berkeley Climate Action Coalition Convening!
August 11, 2015

- October 4 County Board of Supervisors Vote
 - Phase 2 & 3
- Approve JPA Formation
 - Unity Proposal
 - Community Advisory Committee
 - Community Benefit Goals
 - Business Plan
 - Cap RECs at 1.65%
 - Just Transition
- \$2.4 Million
- City-by-City Votes
- JPA Board Seated January 2017
- Program Launch Fall 2017

EAST BAY COMMUNITY ENERGY

- District 1 – Supervisor Haggerty
Dublin – Nov 1
Fremont – Oct 11
Livermore – Oct 10
- District 2 – Supervisor Valle
Fremont – Oct 11
Hayward – Oct 13, Nov 15, Dec 6
Newark – Oct 27
Union City – Oct 25
- District 3 – Supervisor Chan
Oakland – Nov 1, Nov 29
Pleasanton – Oct 4 (passed); next TBD
- District 4 – Supervisor Miley
Oakland – Nov 1, Nov 29
Pleasanton – Oct 4 (passed); next TBD
- District 5 – Supervisor Carson
Albany – Nov 21
Berkeley – Nov 1
Emeryville – Oct 18
Oakland – Nov 1, Nov 29
Piedmont – Oct 17

EAST BAY COMMUNITY ENERGY



**CLEANER
GREENER
ELECTRIC POWER**

CLEANER, GREENER ELECTRIC POWER

Alameda County residents and businesses will soon have a new—greener—choice for the source of electricity that powers our homes and businesses.

East Bay Community Energy (EBCE) will be a community-governed power supplier, committed to providing electricity generated from a high percentage of renewable sources such as solar, wind and geothermal.

HOW WE'LL DO IT

EBCE will pool the electricity demand of our homes and businesses and buy electricity for us. EBCE will continue to

SOURCE **DELIVERY** **CUSTOMER**

www.ebce.org

EAST BAY COMMUNITY ENERGY