

# CO2toEE

## **Expanding Building Energy Efficiency Financing for Businesses, Cities, Real Estate Owners, Schools and Low Income Housing**

The purpose of CO2toEE is to advocate for allowing distributed energy efficiency investments to participate in cap-and-trade programs. We believe that:

- 1) Energy efficiency, especially in buildings, represents the largest untapped opportunity to cut CO<sub>2</sub> emissions deeply and cost-effectively
- 2) Businesses, schools, building owners, and cities that invest in energy efficiency should be able to participate in cap-and-trade and other carbon pricing programs
- 3) Allowing building owners to participate in cap-and-trade programs can be done cost-effectively, and would deepen and make carbon markets more efficient, expand energy efficiency investment, accelerate CO<sub>2</sub> emissions reductions, and have broad secondary benefits, including enhanced competitiveness, increased employment, greater resilience and security, and improved health
- 4) Making this change to cap-and-trade programs, including California's, can and should happen now

### **Project Steering Committee:**

- **Greg Kats** (Co-Chair) – President, Capital E; Former Director of Financing for Energy Efficiency and Renewable Energy at DOE
- **Donald Kennedy** (Co-Chair) – President Emeritus of Stanford University; Former Editor in Chief of *Science*
- **George Frampton** – Former Chair, Council on Environmental Quality; Former President, The Wilderness Society
- **Rex Hime** – President & CEO, California Business Properties Association
- **Dan Kammen** – Professor and Director, Energy Laboratory, University of California, Berkeley
- **Dennis Murphy** – Chair of USGBC California
- **Brenna Walraven** – President and CEO, Corporate Sustainability Strategies; Former Chair of BOMA International

### **Advisory Board:**

- **Gregg Ander** – VP, Energy Foundation; Former Chief Architect, SoCal Edison
- **Karin Corfee** – Managing Director, Navigant Consulting
- **Vic Fazio** – Senior Advisor, Akin Gump; Former 10 term US Congressman from N California
- **Anna Ferrera** – Executive Director, School Energy Coalition
- **Dirk Forrister** – President and CEO, International Emissions Trading Association
- **David Freeman** – Former head of SMUD and TVA
- **Denis Hayes/Kathleen Rogers** – EarthDay
- **Hunter Lovins** – Co-Author, Natural Capitalism
- **Frank Loy** – Former Under Secretary of State for Global Affairs; Former Board Chairman, Environmental Defense Fund
- **Nancy Pfund** – Managing Partner, DBL Investors
- **Art Rosenfeld** – Former CEC Commissioner
- **Steve Westly** – Former California State Controller and Chief Financial Officer

### **Endorsements Include:**

- ❖ Alliance to Save Energy
- ❖ Association of Corporate Real Estate Executives of Northern California
- ❖ ACRE of Southern California
- ❖ Autodesk
- ❖ BOMA California
- ❖ California Business Properties Association
- ❖ California Downtown Association
- ❖ City of San Francisco
- ❖ Commercial Real Estate Development Association

- ❖ Earth Day Network
- ❖ Enterprise Community Partners
- ❖ Institute of Real Estate Management
- ❖ International Council of Shopping Centers
- ❖ Johnson Controls Inc.
- ❖ National Electrical Manufacturers Association
- ❖ Retail Industry Leaders Association
- ❖ School Energy Coalition
- ❖ U.S. Green Building Council
- ❖ U.S. Green Building Council-California (all 8 chapters)

## The Opportunity

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The CO<sub>2</sub>toEE coalition seeks to enable energy efficiency to participate in Greenhouse Gas Cap-and-Trade Programs. Allowing businesses, cities and real estate owners to get the value of the CO<sub>2</sub> reductions that occurs from their energy efficiency investments would drive much deeper CO<sub>2</sub> reductions cost-effectively.

Most states are seeking to achieve deep CO<sub>2</sub> emissions cuts under the newly issued U.S. Clean Air Act Section 111(d) program. For most states, energy efficiency in existing buildings represents the largest lowest cost opportunity to achieve CO<sub>2</sub> reductions. But states generally lack the tools to achieve deep building energy efficiency improvements. For example, California's own assessment of the state's climate change progress finds that **“To reach the State's [California's] long-term goals, the energy sector must strive to achieve...much greater efficiencies from the existing building stock...”** (P 83).<sup>1</sup> The Report also urges California to **“collaborate with the real estate and property management industries in crafting aggressive but practical solutions for achieving high penetration of efficiency upgrades to all existing buildings”** (P 43-44).<sup>2</sup> Exactly meeting this objective, the CO<sub>2</sub>toEE initiative was co-developed by and is broadly endorsed by California's major real estate and property management groups. CO<sub>2</sub>toEE would substantially increase funding for deep energy efficiency investments in California's buildings by providing a mechanism to allow buildings and building owners (including businesses, schools and cities) to participate in the state's Cap-and-Trade market.

Current carbon pricing has such a small impact on electricity/energy prices that it has no material impact on EE decisions. In contrast, CO<sub>2</sub>toEE would achieve a roughly 10X larger impact by allocating ownership of CO<sub>2</sub> reductions that result from energy efficiency investments to the businesses, schools and cities that make these EE investment decisions.

Today, businesses, building owners, cities or schools investing in energy efficiency achieve two valuable objectives - cutting energy consumption/costs, and reducing CO<sub>2</sub> emissions. But under current Cap-and-Trade rules, these EE investors receive the financial value of only one of these benefits – lowered energy costs.

A cost-effective way to expand energy efficiency (EE) investment is to harness the Cap-and-Trade markets to provide businesses, schools and real estate owners the value of the CO<sub>2</sub> reductions that occur as a result of their EE investments. CO<sub>2</sub>toEE is a market-based mechanism that would enable aggregators (managed under a Public Utilities Commission or Energy Commission contract) to efficiently document, aggregate, and sell CO<sub>2</sub> reductions in the Cap-and-Trade market on behalf of the businesses, schools, and real estate owners that invest in EE. This would allow businesses and building owners investing in electrical or natural gas efficiency to receive the value of the associated CO<sub>2</sub> reductions. The value of CO<sub>2</sub> would offset a significant part of the capital cost of EE investments, increasing the depth and volume of energy efficiency investments. By adding another financial incentive for investing in energy efficiency, CO<sub>2</sub>toEE would expand and deepen the market for energy efficiency products and services in California. CO<sub>2</sub>toEE would provide a roughly 10X larger price signal and investment impact in motivating energy efficiency than the impact of carbon costs on energy prices.

It is worth noting that state funds generated from climate change reduction programs and intended for EE financing are politically uncertain. For example, New Jersey withdrew \$65 million of its climate change-linked funds intended for EE investments in order to help offset the state budget deficit. More recently, Governor Brown diverted CARB allowance sale proceeds. By awarding CO<sub>2</sub> value directly to EE investors and eliminating uncertainty of EE payments, CO<sub>2</sub>toEE would make EE funding more secure and reliable - thereby increasing EE investment.

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<sup>1</sup> California Air Resources Board. (2013). *Climate Change Scoping Plan First Update*. Retrieved from [http://www.arb.ca.gov/cc/scopingplan/2013\\_update/discussion\\_draft.pdf](http://www.arb.ca.gov/cc/scopingplan/2013_update/discussion_draft.pdf)

<sup>2</sup> California Air Resources Board. (2014). *Proposed First Update to the Climate Change Scoping Plan: Building on the Framework*. Retrieved from [http://www.arb.ca.gov/cc/scopingplan/2013\\_update/draft\\_proposed\\_first\\_update.pdf](http://www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf)

## CO2toEE Implementation

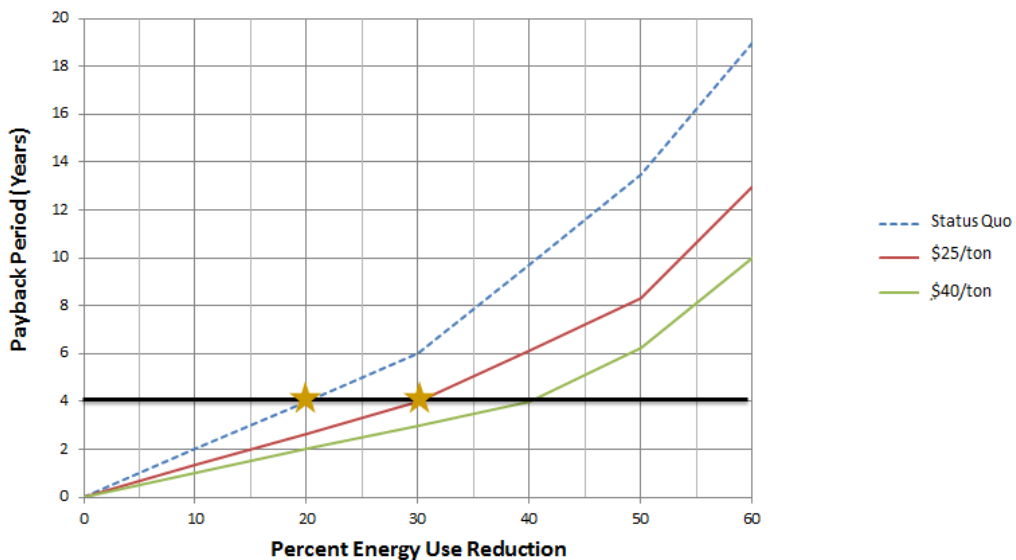
This Energy Efficiency financing mechanism was designed to leverage California’s Cap-and-Trade program to pay California’s businesses, cities, real estate owners and schools for deep energy efficiency investments in their buildings. In this market-based program, building owners, schools and companies investing in energy efficiency would secure the value of the CO<sub>2</sub> reductions that result from their EE investments. Depending on market prices for CO<sub>2</sub>, this mechanism is expected to provide from about 8% up to 40% of the capital cost of EE investments, and would be transacted by qualified market makers (managed under the California Energy Commission or the Public Utility Commission). Qualified PUC or CEC-supervised third parties would broker all transactions, so processing and documentation costs would be minimal for participating businesses, schools and real estate owners.

## Illustrative Impact

Debt Financing				
	Cost of CO <sub>2</sub>	\$15/ton	\$25/ton	\$40/ton
Equivalent to % of Capital Cost for EE Upgrade	0% debt financing	8	13	21
	33% debt financing	12	19	31
	50% debt financing	16	26	42
Assumed % energy savings achieved		20	30	40

As described in the Illustrative Impact chart below, with a 4-year payback requirement, a current commercial energy efficiency retrofit might achieve a 20% savings (first star). With a \$25/ton CO<sub>2</sub> value with CO<sub>2</sub>toEE enabling debt financing, EE savings would increase to roughly 30% (2nd star). At a CO<sub>2</sub> value of \$40/ton enabling debt financing, EE savings could increase to roughly 40%. As the financial value of CO<sub>2</sub> rises, investors could make deeper EE investments to both achieve larger energy cost savings and to secure the associated CO<sub>2</sub> reduction value.

**CO<sub>2</sub>-to-EE Mechanism: Illustrative Impact**



Assumes upfront payment from CO<sub>2</sub>toEE enables debt financing

Black line indicates 4-year payback period