

# FIVE PILLARS

50%  
LESS OIL

50%  
RPS

DOUBLE  
EFFICIENCY

MITIGATE  
METHANE

HEALTHY  
SOILS

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Sustainable Organics Recycling

## Governor Brown's Five Pillars

California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32), as well as reaching the 33% renewable portfolio standard (RPS) by 2020. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy, the amount of carbon pollution per million dollars of GDP, is declining. Carbon intensity has dropped 23 percent from the peak in 2001, declining an average of 1.9 percent per year over the past four years as GDP grew 6.6 percent overall during the same period, according to the California Air Resource Board. This demonstrates a decoupling of economic growth and carbon pollution.

With AB 32 as a strong foundation, Governor Brown unveiled his **Five Pillars** vision in his inaugural address earlier this year, that by 2030, California will: increase from one-third to 50 percent our electricity derived from renewable sources; reduce today's petroleum use in cars and trucks by up to 50 percent; double the efficiency savings from existing buildings and make heating fuels cleaner; reduce the release of methane, black carbon and other potent pollutants across industries; and manage farms and rangelands, forests and wetlands so they can store carbon. The governor's office is now hosting a series of Pillar Symposiums – 2030 Climate Change Commitments – on each of these topics. The Legislature has endorsed the first three pillars with SB 350 (DeLeon). The Pope has blessed this vision with the release of the encyclical, titled "Laudato Si," or "Praised Be", being hailed as one of the most important statements on climate change ever produced by the Catholic Church.

Governor Brown also issued an executive order to establish a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030 - the most aggressive benchmark enacted by any government in North America to reduce carbon emissions over the next decade and a half. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050. "With

*this order, California sets a very high bar for itself and other states and nations, but it's one that must be reached - for this generation and generations to come,"* said Governor Brown. The Governor's executive order aligns California's greenhouse gas reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris later this year. SB 32 (Pavely) plans to place this executive order into law this year.

*With the Governor's Five Pillars program taking California to 2030 with zero organic waste, the community-scale model weaves all pillars together for a net-zero and carbon negative future at the local level.*

Building upon AB 32, the **Five Pillars** are the structural elements to achieve the SB 32 goals. Organic waste conversion is the mortar that binds these pillars together. Eliminating organics from the landfills will mitigate methane generation as a short-lived climate pollutant (Pillar 4) and instead create biomethane at anaerobic digestion facilities to generate more renewable energy (Pillar 2) and carbon negative fuel (Pillar 1) to displace diesel. The digestate can be composted to sequester carbon and promote healthy soils (Pillar 5). The multi-billion dollar Greenhouse Gas Reduction Fund from cap-and-trade auction revenues has been re-branded as **California Climate Investment** to assist in funding this economic transition where the economy grows and carbon intensity decreases.

## California's Anti-Carbon Crusade

A recent editorial by Sacramento Bee columnist Dan Walters reported on Governor Jerry Brown's participation in the Vatican conference on climate change. Following are excerpts from that article, titled *Anti-carbon crusade clouded with uncertainties*, and published by The Sacramento Bee on July 26, 2015.

*"Declaring it a moral imperative, California's leading figures have embarked on a crusade to 'decarbonize' the state, sharply reducing emissions of gases they say threaten to wreak havoc, even extinction, on the globe's human population."*

*"We don't even know how far we've gone, or if we've gone over the edge," Gov. Jerry Brown said last week at a Vatican conference on climate change, tied to an encyclical by Pope Francis. 'We are talking about extinction. We are talking about climate regimes that have not been seen for tens of millions of years. We're not there yet, but we're on our way.'*

*"A first-stage decarbonization program is underway. But Brown and other political figures, such as Kevin de León, the president pro tem of the state Senate, want California to set a global example over the next 15 years by reducing petroleum consumption in cars and trucks by 50 percent, making buildings more energy-efficient and increasing electrical production from renewable sources – solar, wind and geothermal – from 33 percent, the current goal, to 50 percent. De León is carrying Senate Bill 350 that would implement those goals."*

*"Brown told the Vatican conference that to truly control climate change, humankind must limit carbon dioxide emissions annually to 2 metric tons per person, pegging current U.S. emissions at 20 tons and California's at 12 tons. Federal agencies put California at about 9 tons per capita, equal to Germany and Japan. With 12 percent of the nation's pop-*

*ulation but just 6 percent of its carbon emissions, California already has one of the nation's smallest carbon footprints, and its 350 million metric tons each year are just 1 percent of global emissions."*

*"Thus, whatever happens here – even slashing California's emissions by three-fourths to 2 tons per capita – won't have a major, or perhaps even measurable, physical impact. Its effect, if any, would be metaphysical, as the governor clearly hopes."*

*"Californians have more than 30 million cars and light trucks and drive them more than 300 billion miles a year, consuming about 15 billion gallons of fuel costing roughly \$50 billion. The Air Resources Board, California's chief implementer of carbon reductions, says policies already in place would reduce automotive petroleum use by more than 20 percent by 2030 and that we could achieve the 50 percent goal by improving fuel economy of new cars, increasing the number of zero-emission (electric) vehicles, shifting to low-carbon fuels, building the state's bullet train and 'supporting community planning to reduce vehicle-miles traveled.'"*

*The state's petroleum industry says reducing use of fuel by 50 percent could have a massive negative impact on tens of thousands of jobs in refineries and other industries, but decarbonization advocates reject its assertions."*

*"It's a reminder that Brown and others are prodding the state into a somewhat mysterious realm, with policies whose impact on 39 million Californians is uncertain, while leaving nitty-gritty details to an unelected agency, and hoping to influence hundreds of other governments to follow suit. They see a moral imperative to set an example, but could it be merely hubris and symbolism taken to an nth – and very costly – degree?"*

– Courtesy of Mr. Walters

### SB 350 (De León)

TOPIC: *Clean Energy and Pollution Reduction Act of 2015.* This bill will reduce petroleum use by 50 percent by 2030 and increase renewable energy to 50 percent by 2030.

This bill would require that the amount of electricity generated per year from eligible renewable energy resources be increased to an amount equal to at least 50% by December 31, 2030. This bill would also require those standards to be in furtherance of achieving a reduction in petroleum use in motor vehicles by 50% by January 1, 2030. The bill would require the state board, by January 1, 2017, to prepare a strategy and implementation plan to achieve this reduction.

STATUS: Passed Assembly Natural Resources Committee on July 7, 2015. Amended and re-referred to Assembly Appropriations committee.

**CCC to consider SUPPORT on 8/6/15.**

### SB 32 (Pavley)

TOPIC: To reduce GHGs by 40 percent of 1990 levels by 2030. This bill would require the state board to approve statewide greenhouse gas emissions that are the equivalent to 40% below the 1990 level to be achieved by 2030 and 80% below the 1990 level to be achieved by 2050, as specified.

The bill would authorize the state board to adopt interim greenhouse gas emission level to be achieved by 2040. CARB shall approve these measures in a public hearing, based on the best available scientific, technological, and economic assessments.

STATUS: Passed Assembly Natural Resources Committee on July 7, 2015. Referred to Assembly Appropriations committee.



### Funding Guidelines Climate Investments

State law requires CARB to develop guidance for all State agencies that receive appropriations from the Greenhouse Gas Reduction Fund, including guidance on reporting, quantification methods, and maximizing benefits to disadvantaged communities. To comply with this law, CARB has developed draft Funding Guidelines to help these agencies use their appropriations in a way that reduces greenhouse gases, furthers the purposes of AB 32, maximizes benefits to disadvantaged communities, and meets the other statutory requirements. The Fund is \$2.2 to \$2.7 billion for 2015-2016, and could increase to \$5 to \$10 billion by 2020.

State of California invites you to participate in a series of public workshops to provide input on a Concept Paper for the Second Investment Plan and the Draft Funding Guidelines for Agencies Administering California Climate Investments. Seven workshops covering the same material will be held across the State. [www.arb.ca.gov/cc/capandtrade/auctionproceeds/upcomingevents.htm](http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/upcomingevents.htm)

Anaerobic digestion with composting is the only program that intersects the three major key sectors (see graphic below) of the investment priorities and the **Five Pillars** of the governor's vision for 2030 that diverts waste for methane mitigation, produces clean fuels and clean energy and makes compost for our working lands, thus sequestering carbon in the soils. Edgar & Associates performed a marginal cost evaluation of anaerobic digestion and covered compost and determined both to be the most cost-effective programs. Comments were filed last year and will be presented again during these workshops to provide the cost-effective metric to leverage more funding.



### New CalRecycle Director for GHG Reduction Era

Scott Smithline was appointed director at the California Department of Resources Recycling and Recovery (CalRecycle) in July 2015. He formerly served the department as assistant director for policy development since 2011. Smithline was a consultant at the Smithline Group from 2008 to 2011, director of legal and regulatory affairs at Californians Against Waste from 2003 to 2008 and an attorney at Lawyers for Clean Water in 2001.

Scott has been instrumental in coordinating with CARB on the AB 32 Scoping Plan and keeping organics out of the landfills by defining GHG metrics and promoting diversion policies. With his tenacity, Scott kept organics on the Governor's agenda and worked hard to allocate cap-and-trade revenue of \$15 million last year and hopefully \$36 million this year to composting and anaerobic digestion. As one of the early anaerobic digestion project developers and consultant, Scott truly understands how anaerobic digestion is integral in binding the pillars together, and is key to the Healthy Soils Initiative.

The California Compost Coalition welcomes an organic champion like Scott Smithline as the third Director of CalRecycle to lead the department in this new GHG era as we plan for 2030 and beyond, and thanks Carol Mortensen for her leadership during the AB 341 era.

#### TITLE 14/27

TOPIC: Revision to Compostable Materials & Transfer/Processing Regulations

CalRecycle is updating regulations to address a broad list of topics, mainly related to the expanding diversion of organic materials from landfills.

STATUS: Another version of proposed draft language addressing many issues raised, including physical contaminant limits for compost and limits on land application of agricultural and food processing materials, was released on June 29, 2015. Comments were due July 14, 2015 with about 15 respondents addressing a variety of issues. Adoption before October 2015 is expected.

#### WASTE DISCHARGE REQUIREMENTS FOR COMPOSTING FACILITIES - REGULATORY UPDATE

The State Water Resources Control Board (SWRCB) is concluding efforts to establish statewide regulations for composting facilities. The SWRCB has officially released final draft language on July 20, 2015. This latest draft language contains two new key provisions which were requested by CCC and others and are another positive step. A public workshop was held at their June 16, 2015 Board Meeting to provide information and receive comments on the DEIR and proposed WDRs. **The SWRCB plans to adopt these WDRs at their August 4, 2015 Board Meeting.**

CCC and other stakeholders met with staff to provide alternative regulatory language in an effort to make some final tweaks to proposed measures that could ease the burden on smaller facilities who may find themselves in Tier II, under current definitions. The new draft language will allow co-collected food and green materials from residences as a Tier I feedstock and will enable operators to exclude finished product storage from working surface requirements for active and curing composting areas.

## Community-Scale Edgar & Associates

The California Compost Coalition (CCC) is a registered Lobbying Coalition with the Fair Political Practices Commission (FPPC), created in 2002 by a group of compost operators in response to demands for increased recycling of organic materials and production of clean compost, bioenergy, renewable natural gas, and biochar.

The California Compost Coalition represents member organic material recyclers and compost operators with a unified statewide voice on many issues: product safety and standards, government regulations, environmental planning, and marketing.

### Members

Agromin  
Atlas ReFuel  
Caglia Environmental  
California Wood Recycling  
CleanFleets.net  
Cold Canyon Compost  
CT Bioenergy Consulting LLC  
Marin Sanitary Service  
Mt. Diablo Recycling  
Napa Recycling Compost  
Northern Recycling Compost  
Organic Waste Solutions  
Phoenix Energy  
Quackenbush Mt. Compost  
Recology  
Sonoma Compost  
Tracy Delta Compost  
Upper Valley Recycling  
Zanker Road Resource Management  
Z-Best Compost Facility  
Zero Waste Energy, LLC

### Executive Committee

Bill Camarillo, Agromin  
Greg Kelley, Northern Recycling Compost  
Mike Madrigal, Recology  
Rachel Oster, Recology  
Will Bakx, Sonoma Compost  
Christy Pestoni Abreu, UVR Compost  
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Neil Edgar, Edgar & Associates Inc.

[www.californiacompostcoalition.org](http://www.californiacompostcoalition.org)

Edgar & Associates has been representing community-scale local independent haulers, recyclers, and composters since 1997. Believing in the laws of thermodynamics, Edgar & Associates was an early adopter of the laws of AB 32 addressing climate change, and how community-scale, distributed energy projects could be one of many programs to be part of the California Global Warming Solutions Act of 2006.

Edgar & Associates became fully invested in the AB 32 Scoping Plan process to promote technologies, policies, and grant incentives for organic waste conversion programs that created renewable energy, renewable natural gas fuel, and organic compost. Representing Napa Recycling & Waste Services and Blue Line Biogenic CNG Facility, Edgar & Associates has secured \$3.0 million and \$2.6 million, respectively, in state grants to demonstrate the viability of community-scale closed-looped carbon negative facilities.

The California Energy Commission (CEC) has invited Edgar & Associates to present at the *First Annual Technology Merit Review* on September 17-18, 2015 at UC Davis, under the Alternative and Renewable Fuel and Vehicle Technology Program, which is funded by DMV fees. The next CEC grant cycle will be noticed in January 2016 for another \$15 million in funding. Representing funding recipients, the merit review workshop is focused on biofuel and biomethane fuels and the deployment of grant dollars to build facilities. CEC is seeking feedback on project development and any critical barriers experienced to achieve commercialization. Our insights and experience will help guide improvements for future projects and provide critical input on current and future program objectives where we plan to focus on such facilities and increase CEC grant dollars and the Cap-and-Trade allocation under the

California Climate Incentive programs for funding projects like this.

Parlaying the concept of “distributed generation” for electricity, which is heavily promoted by the governor, this community-scale model can be described as a “distributed renewable transportation fuel production facility”. This model can serve a city of approximately 100,000 people by producing

carbon negative fuel from the 25,000 tons per year of organic waste it collects, and truly supports the concept of the green local circular economy. This community-scale model can be replicated throughout California cities and has the economy of scale for this type of technology to be cost-effective, remaining within the capital reach of many companies. This type of community-scale project does not

need to inject biomethane into a pipeline and does not need to wait for the big utilities for an expensive and elusive inter-connection hook-up.

The co-location of food waste with green waste anaerobic digestion operations – at the local facility where the collection fleet is parked and where food waste is processed – is a natural fit to enable emerging technologies. The supply of organics is guaranteed from the local franchise contract with mandates for diversion, and the off-take agreements for fuel, energy, and digestate are internalized within the company structure. A 25,000 TPY facility can produce 325,000 diesel gallon equivalents per year of carbon negative fuel and can fuel a fleet of at least forty CNG trucks. One CNG truck that collects organics has enough feedstock to make fuel for at least four trucks.

The metrics and technology have been validated at the Blue Line Biogenic CNG Facility. With the Governor’s *Five Pillars* program taking California to 2030 with zero organic waste, the community-scale model weaves all pillars together for a net-zero and carbon negative future at the local level.







40 % GHG Reduction below 1990  
by 2030

Governor Brown's

# FIVE PILLARS

50% LESS  
OIL  
by 2030

Convert Organics to  
Carbon Negative Fuel

Low  
Carbon  
Fuel Standard



**LCFS**

10% LESS CARBON  
INTENSITY  
by 2020

50% RPS  
RENEWABLE ENERGY  
by 2030

NET ZERO



Renewable  
Portfolio  
Standard



**RPS**

33% RPS  
RENEWABLE ENERGY  
by 2020

DOUBLE ENERGY  
EFFICIENCY  
by 2030

Decarbonize  
Economy

LEED  
Certification



**Cal-  
Green**

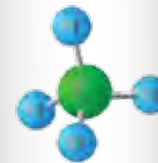
3 MILLION  
METRIC TONS GHG  
REDUCTIONS  
by 2020

90% ORGANICS  
RECYCLING  
by 2025

MITIGATE  
METHANE



Reduce  
Short-Lived  
Climate  
Pollutants



**SLCP**

50% ORGANICS  
RECYCLING  
by 2020

15 MILLION TONS OF  
COMPOST USE  
by 2025

Sequester Carbon  
into Soil

Healthy Soils  
Initiative



**HSI**

7.5 MILLION TONS  
OF COMPOST USE  
by 2020



2015 • Executive Order B-30-15, SB 350, SB 32

2006 • California Global Warming Solutions Act • AB 32

