

Highlights from the Sonoma County Community Climate Action Plan



Blueprint for the Future

Dear Reader,

This Plan is a call for change. People hear this call differently. Some feel they can postpone action, while others are firmly convinced we must act today – if not yesterday. To all readers we offer a view of change that helps us begin the task ahead.

Change is often unpredictable. Sometimes it moves incredibly swiftly. Other times it seems to stall completely, only to surprise us with its reappearance.

Every historic change is preceded by a massive collection of individual actions. Because we cannot foresee how change will occur, each action is critical.

Readers may not agree with all the solutions presented in this Plan. That is okay. Plans adjust and evolve as they are put into action.

But it is not okay to continue life as usual. Non-action will create severe implications for our future.

Thank you in advance for reading this Plan. We hope you find it inspiring, challenging, and, ultimately, a compelling roadmap of the needed change ahead.

For change is what it is about.

Steering Committee:

Jane Bender, *Santa Rosa City Councilmember*
Jim Leddy, *President, Santa Rosa City Schools*
Tanya Narath, *Executive Director,*
Leadership Institute for Ecology and the Economy
Chris Thomas, *Deputy County Administrator,*
County of Sonoma (ex-officio)

Everyone has a role to create a positive future.

ELECTED REPRESENTATIVES

Institute new ordinances, zoning laws, pricing policies, and land use practices.

Strengthen General Plans and Environmental Impact Reports to promote climate protection.

Coordinate a public works project to increase efficiency and develop local renewables.

Make climate protection a high priority for staff and other resources.

BUSINESS PEOPLE

Be a voice for entrepreneurial innovation and bold action.

Take advantage of new market opportunities.

Set up employee incentives to reduce driving fossil fuel vehicles.

COMMUNITY MEMBERS

Urge elected representatives to take action.

Support the introduction of new pricing policies and financing solutions.

Make the future happen with your choices — and encourage others to do the same.

Together we can do it.

Overview of Solutions

Sonoma County's commitment to the future and its pressing desire for extraordinary action brought this Plan into being.

This Plan is, in essence, a public works project to meet Sonoma County's bold goal for reducing greenhouse gas (GHG) emissions — 25 percent below 1990 levels by 2015. All nine Sonoma cities and the County established this goal in 2005.

Achieving Sonoma County's climate goal requires a monumental and extremely challenging intervention in business as usual. We must move together at tremendous *speed* and *scale*. Individual actions and volunteerism, while essential, are insufficient.

Transforming our energy infrastructure from fossil fuels to renewables entails a unity of purpose, ingenuity, and commitment similar to this country's mobilization during World War II and the New Deal era.

Although our challenge is great, this crisis also presents us with opportunities. We have the knowledge, resources, and technology to initiate change that will not only reduce our GHG emissions, but also will result in a more robust and secure economy powered by local, reliable energy; a healthier environment with cleaner air and water; and preservation of the natural world.

We Must Do It All

Emissions have continued to rise since 1990. In order to meet our goal of a 25 percent reduction below 1990 levels by 2015, we must reduce emissions by a total of 1.4 million tons (or 37 percent) below the business as usual level projected for 2015.

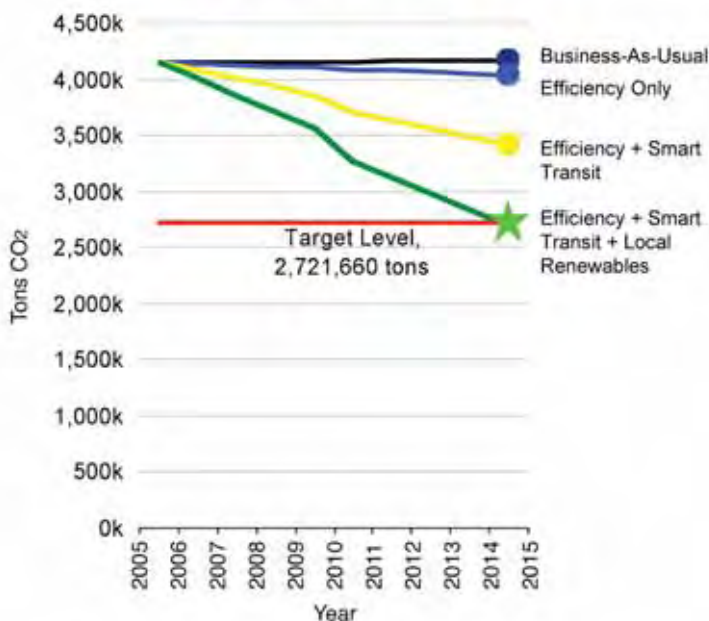
The Plan's solutions fall into four major categories:

1. Efficiency First: Invest in widespread energy and water efficiency to reduce demand.
2. Smart Transit and Land Use: Shift transportation from fossil fuel vehicles to transit, walking, bicycling, and electric vehicles.
3. Power Up Locally: Invest in Sonoma County renewable energy sources and jobs.
4. Conserve and Capture: Protect our forests and farmland, sequester carbon, and convert waste into energy.

The modeling used in the Plan shows us that all of the major solutions must be implemented. The sooner we start, the more successful we will be.



GHG Emissions Projected for Action Plan Solutions



Getting started with the Plan

READ IT

The whole Plan can be downloaded at www.coolplan.org.

SUPPORT IT

Sign up to support implementation of the Plan at www.coolplan.org.

SHARE IT

Encourage others to get informed and involved.

LIVE IT

Make personal choices to break free of fossil fuel.

Efficiency First:

Invest in widespread energy and water efficiency to reduce demand

Greenhouse gas (GHG) reduction target: 168,000 tons of CO₂ (12 percent of the total reduction needed)
Goal: Retrofit 80 percent of Sonoma County homes and commercial spaces to highest possible efficiency level.

Decreasing the amount of energy we use to heat and cool our buildings, pump and heat water, and power appliances and lighting is the cheapest, fastest, and easiest way to reduce GHG emissions. Efficiency can be considered “virtual energy” that in most cases is cheaper than generating energy. Retrofitting existing buildings to lower their energy consumption is like building a virtual wind farm, only cheaper and faster.

Despite California’s reputation for being very energy efficient, there is considerably more we can do to reduce our energy consumption with technical and economic tools that already exist.

SOLUTIONS

A. Retrofit existing buildings — The Plan sets an ambitious goal of retrofitting 80 percent of Sonoma County homes and commercial spaces to the highest possible efficiency level. This includes sealing building shells, upgrading insulation, improving air conditioning and furnace efficiency, replacing windows, installing energy efficient appliances (refrigerators, heaters, clothes dryers, stoves, etc.), and more.



B. Maximize water efficiency in our homes and businesses — The end use of water generates over four times more GHG emissions than treating and delivering it. Reducing hot water use is the highest priority for efficiency improvements. Installing water-saving appliances, solar hot water heaters, and efficient irrigation systems will decrease water use and GHG emissions. The Plan

calls for retrofitting 80 percent of existing residential and commercial water customers with the most efficient indoor water fixtures and appliances.

C. Mandate green building standards — Local governments can institute a mandatory green building ordinance similar to the one in Rohnert Park, and remove regulatory barriers to green building projects. They can build in regulatory incentives to encourage developers to exceed the requirements and build “zero-energy” homes and buildings.

D. Improve efficiency of pumping operations for water and wastewater — Water pumping and treatment accounts for 2 percent of the County’s energy use. Water delivery efficiency can be improved by coordinating pumping schedules to decrease peak flows. Byproducts of water treatment can be treated with waste digesters to generate energy from biogas and cogeneration.

Imagine:

Living in a home and working in a building that are comfortable, efficient, healthy, and beautiful

Being paid for work that helps green our community

Knowing that hundreds of new green job opportunities for youth apprentices, tradespeople, and local businesses have been created

Receiving electricity, natural gas, water, and wastewater bills that remain stable year after year

Saving money on your utility bills by investing in improved efficiency

Being free of fossil fuels



“This is change that can’t happen fast enough.”

— **Terrance Davis**, retired Community Bank President, business leader, father and grandfather.

Smart Transit and Land Use:

Shift transportation from fossil fuel vehicles to transit, walking, bicycling, and electric vehicles

Imagine:

Going places in a pleasant and reliable interconnected transit system that runs on renewable power

Living in a place that is vibrant and walkable

Spending more time outside

Bicycling and walking on safe and smart routes

Breathing healthy air and enjoying good health



"This Plan provides all of us who want to make these efforts a priority in our businesses and gives a roadmap to make changes."

— **Lisa Wittke Schaffner, Executive Director, Sonoma County Alliance**

GHG reduction target:

588,000 tons of CO₂ (41 percent of the total reduction needed)

Goal: Create the infrastructure, incentives, and pricing to reduce dependence on private vehicles

Transportation in Sonoma County is the fastest growing source of GHG emissions, and accounted for about 60 percent of total emissions in 2007. Nearly four out of five trips made in Sonoma County are by single occupant, fossil fuel powered automobiles.

Transportation and land use are tightly coupled. Building new roads leads to sprawl which leads to increased automobile use. In contrast, as urban centers become more densely populated, transit, walking, and biking become more attractive.

SOLUTIONS

- A. **Build the SMART train** — A Sonoma/Marin train and parallel bike path will provide the transportation backbone to organize future public transit and urban development.
- B. **Implement the Comprehensive Transportation Plan (CTP)** — The Sonoma County Transportation Authority includes GHG emission reduction as a top priority to guide future transportation planning. Implementing the CTP should achieve a 13 percent shift from cars to public transit, biking, and walking.
- C. **Strengthen transit-oriented, mixed-use development** — The County and cities can strengthen land use regulations to reduce GHG emissions using General Plans, Environmental Impact Reports, and zoning laws.
- D. **Use urban growth limits to control sprawl** — Sonoma's eight cities with current urban growth limits can maintain them and Cloverdale can adopt an urban growth boundary.
- E. **Strengthen zoning laws to protect lands that sequester carbon** — Local governments can discourage new residential development in rural areas to support local agriculture and forestry.
- F. **Institute demand pricing policies** — Cities can ensure that prices for private vehicle use reflect the true cost to the community. The revenues from congestion and parking fees, for example, can be reinvested to pay for enhanced public transit and walking and biking infrastructure.
- G. **Create an electric car share fleet** — Making electric cars available for rent could achieve a 10 to 15 percent shift away from fossil fuel powered vehicles.
- H. **Encourage business leadership** — Local businesses can implement telecommute programs and develop other innovative means to incentivize, support, and develop alternatives to private fossil fuel powered vehicles.
- I. **Reduce regulatory barriers** — Use fast track permitting for "green" projects. Modify permitting procedures to accommodate siting of renewable energy projects including solar, wind, and geothermal.

Power Up Locally:

Invest in Sonoma County renewable energy sources

GHG reduction target:

630,000 tons of CO₂ (45 percent of the total reduction needed)

Goal: Develop a low carbon electricity portfolio with 67 percent new local renewables.

In Sonoma County currently, electricity is responsible for approximately 23 percent of our GHG emissions, and natural gas for an additional 17 percent, making these sources 40 percent of total emissions. If local governments are to address the climate crisis effectively they must facilitate a shift in how we obtain and use energy.

Sonoma County's utility provider, PG&E, currently provides 12 percent of our energy from renewable non-GHG emitting sources, and has a state mandate to increase that to 20 percent by 2010. Approximately 40 percent comes from nuclear and large hydroelectric, which do not emit GHGs, and are not considered renewables by the State of California. PG&E's long-term energy portfolio leaves us short of reaching our target for GHG emission reductions in the electricity and natural gas sector. If we achieve only the state-mandated level of renewables, we will have to make up the GHG reduction shortfall in other sectors, where the goals are already ambitious and significant other challenges exist.

Even with the most ambitious efforts described above to increase energy efficiency and build a new transit system, we fall short of our County target for climate protection. We have tremendous potential to produce local renewable energy in Sonoma County. Overcoming the financial barriers is our challenge.

SOLUTIONS

- A. **Conduct a phased rollout of local renewable energy sources** — The Plan estimates that we can produce at least 67 percent of our current energy needs from a diverse portfolio of renewable sources generated inside the County (763 megawatts), and reduce our GHG emissions from electricity by 50 percent.
- B. **Replace natural gas and propane with electric and solar heat sources** — The goal laid out in the Plan is to replace 80 percent of residential natural gas furnaces with heat pumps, district heat from cogeneration, or waste-to-energy where available, as well as replace 80 percent of natural gas water heaters with solar hot water heaters.

- C. **Incentivize small-scale solar, wind, and hydro installations** — Collaboration between property owners, local construction companies, electrical contractors, and the public power entity (described under Financing Tools) will benefit all parties by maximizing access to the most cost-effective sites for energy generation, optimizing loads, designing favorable rate structures, and facilitating efficient designs.



Imagine:

Heating our homes with warmth from the earth, and our water with heat from the sun

Seeing solar panels and windmills throughout the County

Contributing to our community energy project with affordable solar, wind and hydro generators at your home or workplace

Feeling secure because our energy source is renewable and local

Living in a community famous for incubating alternative energy innovations and businesses



"I don't suppose anyone would imagine that meeting the scientific imperative would be anything less than staggering."

— **Sam Pierce, Principal Engineer, Tellus Applied Sciences and former Mayor of Sebastopol**

Conserve and Capture:

*Protect our forests and farmland, sequester carbon,
and convert waste into energy*

Imagine :

Eating mostly locally-produced food

Producing electricity and fuel as well as food and wine from farms and vineyards

Using and throwing away less stuff

Capturing landfill gases to generate electricity

Enjoying the beauty of our precious coastal prairie grasslands that store carbon and provide wildlife habitat

Appreciating the majesty of protected groves of towering redwood forests and oak woodlands throughout the County that lock up tons of carbon for generations to come



Photo: Scott Hess

"With the global climate crisis facing us, let's not repeat the inaction leading up to our current fiscal crisis."

— Susan Moore, Community Activist

"It makes economic sense and it's the right thing to do!"

— Mike Kerns,
Chair, County of Sonoma Board of Supervisors

Agriculture and forests have tremendous potential to not only generate energy through waste products (e.g., biogas from anaerobic digestion, biodiesel from waste biomass, composting) but also to sequester or hold carbon in soil, on farms, vineyards, and in forests. Also, effective solid waste management and biogas collection have the potential to provide new untapped sources of energy.

While the GHG emission reductions projected in the Plan for Agriculture/Forests and Solid Waste sectors is relatively small, there is tremendous potential for significant contributions in these areas, particularly over the long term. Moving forward, further research and analysis is essential to develop more climate protection solutions with agriculture and forests.

SOLUTIONS

- A. **Encourage, incentivize, and mandate carbon sequestration practices** — A systems approach to agriculture can improve nitrogen management (thereby reducing nitrous oxide GHG emissions) and enhance carbon sequestration in soil. Planting cover crops, hedgerows, trees, and other vegetation provides carbon sinks and creates additional benefits.
- B. **Generate energy from agricultural solid waste** — Both on-farm and central facilities can be developed to process compost and use biomass to produce biodiesel. Compost byproducts can be applied to agricultural fields to reduce the use of fossil-fuel based nitrogen fertilizers.
- C. **Generate energy from biogas** — Biogas digesters on dairy farms prevent the escape of methane, a potent GHG, and can be used to generate energy from the gas and heat that result from decomposition. A centralized digester facility processing agricultural waste from multiple sources could generate energy on a community scale.
- D. **Improve operational efficiency** — All of the improvements described in the Efficiency First section can be adopted by the agricultural sector. Improving agricultural water efficiency is a priority.
- E. **Use conservation easements to protect agriculture and forest land** — Zoning laws can be used to promote cluster development and encourage greater use of easements. "Climate reserve" zones on forestlands can be identified and secured with conservation easements. Tax incentives can increase the amount of land under conservation easement.
- F. **Implement the County's Integrated Waste Management Plan, and collect landfill biogas** — Increasing rates of recycling, reuse, and separation of yard and food waste for composting reduces GHG emissions. Using an anaerobic digester and collecting biogas will provide a source of energy.



Financing Tools

Investing in our local community

If solutions exist and Sonoma County has pledged to protect the climate, what keeps us from aligning our actions with our pledge? In most cases the hurdle is financing. But the money exists; locally we spend millions of dollars on fossil fuel. How do we shift our spending from fossil fuel to renewables? Financing provides the means to do this. Transforming our energy infrastructure creates new opportunities for this community to invest in itself.

How Big Is the Investment We Need to Make?

Though several of the solutions identified in this Plan do not yet have projected costs associated with them, we estimate that we must invest \$3.5 to \$4 billion over coming years to accomplish the most essential priorities.

The three most powerful financing options described in the Plan are summarized here. These tools are complementary and apply to energy efficiency and development of renewable energy.

Developing more financing tools is part of our challenge.

Summary of Financing Tools

AB 811

Assembly Bill 811 allows local governments to establish voluntary assessment districts and provide low-cost loans to property owners for building efficiency retrofits (but not appliances) or solar systems. These projects are secured with a lien on the property where they are located; annual property tax increases cover the cost. There is no up-front cost to the property owner, and although the annual property tax payment increases, there will also be a savings on energy costs.

Community Choice Aggregation (CCA)

Any Sonoma County government that decides to form a CCA (made legal by Assembly Bill 117) would determine its own electric energy supply, and could access low-interest municipal revenue bonds to develop local renewable energy sources. With Community Choice the local government does not go into the business of supplying electricity but contracts with an experienced electric service provider. The local government's role is primarily as a planning and authorizing agency. Using the revenue stream generated by Sonoma County electricity and natural gas ratepayers, a CCA could secure and pay back an estimated \$4 to \$6 billion in 30-year bonds.

Pay-As-You-Save®

This financing mechanism can be used by any utility. Customers pay for efficient appliances by agreeing to make monthly payments on their utility bill. Customers have no up-front payment, no debt obligation, no credit checks, and no liens. There is a guarantee that their monthly charges will be less than their estimated savings on energy and water. Because the arrangement is attached to a property and not a person, customers pay only while they remain at the location, and even renters or short-term owners can benefit. This mechanism compliments AB 811, which cannot be used to purchase efficient appliances.



Illustration: Chris Blum

Financing provides the means to escape the fossil fuel trap to a renewably-powered future.

To put this investment into perspective and test it against reality, we examined related County expenditures:

The 2007 Gross Metro Product (i.e., the amount of money flowing through the local economy) for Sonoma County was \$18.5 billion.

The annual cost of personal vehicle travel in Sonoma County is more than \$5 billion, including about \$850 million for fossil fuels.

The cost of widening Highway 101 between Windsor and Marin is more than \$1 billion.

The County's annual electricity and natural gas bill is more than one-half billion dollars.

These numbers illustrate that a public works project such as described in this Plan, financed wisely and amortized over time, is feasible.

"Maybe this whole issue will save our economy."

**— Tim Smith, Supervisor,
Third District, County of Sonoma**



Standing together for the future

What's Next?

The true test of this Plan and our community will be what happens next. While a substantial amount of effort was put into producing this Plan, a much greater effort — by orders of magnitude — will be required to implement it.

What this Plan makes abundantly clear is that nothing short of transforming our energy, transportation, and land use systems is required. It should also be emphasized that with this transformation will come great rewards — energy security and price stability, green job creation, new business and investment opportunities, greater health and sustainability, and a role as an inspiring leader nation-

wide for what a community can do to respond to the great challenge of climate change.

We are blessed with many advantages in Sonoma County, covering the spectrum from abundant potential for generating renewable energy, to well-informed concerned citizens and elected representatives, to a relatively prosperous economic base. It is our responsibility to apply these advantages to climate protection, the greatest challenge of our generation. It is time to make our contribution to serve as a model for other communities. It is time to secure a livable future for our children.



Support from the following made this Plan possible: Cities of Cloverdale, Cotati, Healdsburg, Petaluma, Rohnert Park, Santa Rosa, Sebastopol, Sonoma, and Windsor; the County of Sonoma; the Sonoma County Water Agency; the Sonoma County Transportation Authority; the Sonoma County Agriculture Preservation and Open Space District; Catalyst for a Sustainable Future, the James McGreen and Nancy Cadigan Fund (donor-advised funds of Community Foundation Sonoma County); Donald and Maureen Green; the Coddling Foundation; Ken Martin; James Keegan, Clem Carinelli; Dennis Hunter; Brenda and Keith Christopherson; Jean Schulz; and many other private donors. Thank you!

More than fifteen technical experts as well as many ad hoc advisors from business and other sectors, a Steering Committee, and fifty representatives from government, business, youth, and the community at large contributed to the Sonoma County Community Climate Action Plan.

Plan produced by the Climate Protection Campaign (www.climateprotectioncampaign.org) • October 2008

The complete Plan (about 70 pages) and its Source Material (over 500 pages) are posted online: www.coolplan.org

