

Humboldt County

Comprehensive Action Plan for Energy

Adopted September 2012



REDWOOD COAST
EnergyAuthority

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Executive Summary

Consistent with Humboldt County's General Plan, the County of Humboldt recognizes the Redwood Coast Energy Authority (RCEA) as the regional energy authority to foster, coordinate, and facilitate countywide strategic energy planning, implementation, and education through a Comprehensive Energy Action Plan (CAPE). This action plan consists of implementation measures specific to the functions of RCEA as the regional energy authority for Humboldt County and in alignment with the mission and purpose stated in RCEA's Joint Powers Agreement, which is to:

Develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region.

The CAPE strategies target the following objectives:

Regional Energy Planning & Coordination: Facilitate coordinated strategic energy planning within Humboldt County, provide a forum for addressing countywide energy issues, and assist local jurisdictions with completing greenhouse gas inventories, climate action plans, and general plan energy elements.

Energy Reliability & Security: Coordinate with utility providers and other local governments on energy emergency planning and response, evaluate transmission and distribution systems, and conduct a climate change risk assessments and develop adaptation plans.

Economic Development: Support the development of emerging energy technologies, attract and support energy-sector businesses and ventures, and provide training and workforce development assistance for jobs in the energy field.

Built Environment Efficiency: Develop and implement programs which encourage energy efficiency and renewable energy retrofits in existing buildings, and support local implementation of state-wide energy efficiency standards and goals.

Education: Through a variety of channels, provide the community with comprehensive education and information on energy conservation, energy planning, renewable energy, and energy-efficiency.

Water & Waste: Support water and waste conservation initiatives that will result in reduce energy demand and or renewable energy generation.

Transportation: Encourage energy-efficient, health-promoting modes of travel such as walking, bicycling, and public transit, and support the adoption of alternative fuels.

Energy Generation & Utility Services: Promote policies which seek to meet local energy needs with a diversity of renewable energy resources, distributed generation, and cogeneration. This action plan shall be periodically updated by the RCEA Board and presented to the Humboldt County Board of Supervisors for review.

Introduction

ENERGY FUELS OUR EVERYDAY LIVES

In Humboldt County, as in all parts of the United States, we depend on energy 24 hours a day, and we continuously benefit from direct and indirect use of energy resources. Energy is so pervasive in our daily lives that it can sometimes be taken for granted. From the sun we draw heat, light, and solar power; we depend on it to grow our food, forests, flowers, etc. We depend on fossil fuels to get us to work, school, the local shops, and the hospital; to transport our food, commodities, mail, and even garbage; we depend on it to visit exotic places by plane (and to get to the airport), or to visit a friend by car. Electricity enables us to work after the sun goes down; we depend on it to light our offices, classrooms, and streets; to keep our food cold and our ice cream frozen; to pump water through pipes; and to transmit information during this electronic age. Energy in a diversity of forms fuels our industries and business ventures: from powering lumber mills to dairy farms; from firing ceramics to pizzas, and from brewing beer to baking bread. Energy generation and transmission is also an industry in and of itself. Clearly, reliance on energy resources characterizes a large part of our everyday lives.

The production and consumption of energy also affects our daily lives in more indirect ways, particularly with regard to the environment. The burning of fossil fuels has led to damaging environmental effects such as acid rain, smog, water pollution, and global warming. Exploratory drilling and extraction of non-renewable energy sources (such as coal, petroleum, and natural gas), and their attendant infrastructure, has resulted in the degradation of other natural resources, for example forests, coastal communities, and rainforests. Although these areas may be far away, the environmental impacts can reach Humboldt County.

In Humboldt County, energy is used as a transportation fuel and as electrical and heat energy in homes, businesses, industries, and agriculture. In 2010 it is estimated that Humboldt County spent \$460 million to meet local energy demands, the majority of which left the county. Approximately half of the energy was used as a transportation fuel (gasoline and diesel), with large amounts also used to meet end use electrical demands and end use natural gas heating demands. Primary energy sources were comprised mainly of natural gas, gasoline, diesel, and biomass (wood waste and firewood).

REDWOOD COAST ENERGY AUTHORITY

MISSION AND PURPOSE

The purpose of the Redwood Coast Energy Authority is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region for the benefit of the Member agencies and their constituents. To further that purpose, the Redwood Coast Energy Authority will work toward the following goals:

- A. To lead, coordinate and integrate regional efforts that advance secure, sustainable, clean and affordable energy resources.
- B. To develop a long-term sustainable energy strategy and implementation plan.
- C. To increase awareness of, and enhance access to, energy conservation, energy efficiency, and renewable energy opportunities available to the region.
- D. To add value to, but not duplicate, energy services offered by utilities and others serving the region.
- E. To keep key decision makers and stakeholders informed of policy, regulatory, and market changes that are likely to impact the region.
- F. To support research, development, demonstration, innovation, and commercialization of sustainable energy technologies by public and private entities operating in Humboldt County.
- G. To develop regional capabilities to respond to energy emergencies and short-term disruptions in energy supply, infrastructure, or markets that could adversely affect Humboldt residents and businesses.

The CAPE is intended to support achieving these goals through strategies that specifically address: Regional Energy Planning & Coordination, Energy Reliability & Security, Economic Development, Built Environment Efficiency, Education, Water & Waste, Transportation, and Energy Generation & Utility Services.

VISION STATEMENT

The below vision statement was developed through the public comment process for the original draft of the Energy Element prepared by RCEA. It expresses the community qualities and characteristics that the CAPE aspires to achieve, expressed as how Humboldt County could be described in 2030.

In 2030...

Humboldt County is no longer a net importer of energy. We achieve a high degree of energy independence and self-sufficiency through high levels of energy conservation and efficiency combined with locally-produced and -managed energy generation. Most of our energy comes from renewable sources. Significantly less money spent on energy leaves the county.

Individual communities have developed greater energy self-sufficiency and independence as has the county overall. Citizens have a diversity of choices for how to meet their energy needs. We have much more local control over energy prices. We have been able to readily adapt to any major external changes in energy supply or technology.

Our rate of energy consumption is level, due to increasing conservation and efficiency to offset increases in growth-related demand.

Our overall quality of life is as good as or better than it was in 2005. The population is healthier as a result of leading energy-conserving lifestyles. It is safe, pleasant, economically favorable, and typical to have a lifestyle that doesn't consume much energy.

Energy conservation education has reached, and continues to reach, effectively, everyone in the county.

Energy considerations and decisions are integrated with all other decision-making arenas.

The County is energy efficient through neighborhood design. Good community planning has reduced sprawl. There are fewer automobiles and there is less automobile dependence. Public transportation is conveniently available and well utilized and walking, bicycling and other non-automobile forms of transportation are commonly used. There is much less consumption of energy from non-renewable sources for transportation.

All buildings are energy efficient. All new construction is done in the most energy efficient manner, starting with building design. All existing buildings have been upgraded to be more efficient. Energy efficiency is integral to building standards, which have flexibility and include meaningful incentives. Many homes and businesses produce more energy than they consume.

The County is a thriving research and development center and incubator for energy technology and related manufacturing, which is a stable source of local jobs.

Strategies

The County has designated RCEA to implement the following CAPE strategies through RCEA's activities and programs.

REGIONAL ENERGY PLANNING & COORDINATION

Regional Energy Authority (REA). The Redwood Coast Energy Authority shall serve as the REA for Humboldt County.

Regional Energy Forum. Serve as a forum for addressing countywide energy issues.

Coordinated Regional Energy Planning. Facilitate coordinated strategic energy planning within Humboldt County.

Regional Energy Funding. Offer support and act as the fiscal agent and funding clearinghouse for countywide energy programs.

Energy Policies and Plans. Encourage other jurisdictions and entities, including the cities in Humboldt County, to adopt and implement sound energy plans and policies, to include energy elements and/or energy policies in their general plans and ordinances. Advocate and disseminate energy planning strategies, policies, and other information.

Energy Elements. Encourage the adoption of energy elements in other local and regional jurisdictions.

Energy Element Review. Periodically review local Energy Elements and recommend updates, as necessary, to reflect changing technologies for the generation, transmission, and efficient use of energy.

Climate Action Planning. Work with local jurisdictions to complete greenhouse gas inventories, set greenhouse gas reduction targets, and develop climate action plans.

ENERGY RELIABILITY & SECURITY

Climate Change Adaptation. Work with other local entities to conduct a climate change risk assessment and develop an adaptation plan consistent with the best practices guidance provided by the California Natural Resources Agency and California Emergency Management Agency.

Minimize Energy Interruptions. Work with local utility providers to minimize impact of power outages.

Energy Emergency Planning. Assist the Humboldt County Office of Emergency Services with the preparation and periodic update of state-mandated energy-related emergency planning.

Energy Emergency Response Procedures. Assist the Humboldt County Office of Emergency Services in the preparation of energy emergency response procedures for the Humboldt County Emergency Response Plan.

Energy Supply and Transmission/Distribution Report. Review regional energy supply and transmission/distribution reports, and provide comments as appropriate.

Transmission Assessments and Monitoring. Encourage development of long-term transmission assessments and, if necessary, electrical and natural gas transmission grid expansion plans. Monitor local electricity and natural gas transmission system planning to ensure that projected growth areas are adequately served and to support the development of local renewable energy projects.

Interconnected (Looped) Electrical Grid. Work with PG&E to evaluate an interconnected (looped) electrical grid for the county.

ECONOMIC DEVELOPMENT

Emerging Energy Technologies. Support the development of emerging energy technology from local sources—such as Humboldt State University’s Industrial Technology Department and the Schatz Energy Research Center—local innovators and inventors, as well as from non-local sources.

Development Incentives. Collaborate with local economic development entities to identify opportunities for developing jobs in the field of energy conservation, efficiency, and renewable sources.

Business Attraction. Collaborate with local economic development entities to attract technology developers, manufactures, and energy service providers to locate operations in the County when appropriate.

Proactive Development Support. Collaborate with local jurisdictions to identify and pre-assess locations and facilities that could appropriately support energy generation projects and or other energy-related business ventures.

Local Energy Investment. Work with local economic development entities and financial institutions to develop programs and resources that facilitate local community investment in and/or ownership of energy efficiency and renewable energy projects.

Workforce Development. Work with other local entities to provide training and continuing education that develops and maintains a qualified local workforce available to implement energy efficiency upgrades, renewable energy projects, and advanced-vehicle technology deployment.

Energy Project Financing. Work with local economic development entities and/or financial institutions to develop and implement financing programs that enable residents and businesses to implement energy efficiency and renewable energy projects.

BUILT ENVIRONMENT EFFICIENCY

Energy Audits and Retrofits. Encourage full knowledge of the costs and benefits (including product stewardship issues) of energy efficiency retrofitting in all structures and support programs that encourage and facilitate energy audits for all existing buildings and developments.

Retrofits in Existing Buildings. Support public policies, and develop and implement programs, which encourage energy efficiency and renewable energy retrofits in existing buildings while maintaining architectural and historical integrity.

Energy-efficient Equipment. Encourage the use of the most energy-efficient equipment for space and water heating, ventilation, lighting, refrigeration, and air conditioning in all new buildings and developments, including residential and commercial facilities. Solar water heating and solar electric systems shall be encouraged where solar access is available.

“No-Regrets” Solar Planning. Encourage new construction and renovations/remodeling of appropriate scale to incorporate solar-friendly “no-regrets” construction features. This shall include the installation of electrical and plumbing connections for potential future solar electric and solar hot-water systems, proper solar orientation, and adequate unobstructed south facing roof slopes where solar energy equipment can be installed.

Shared Energy Facilities. Support public policies to reduce barriers that may inhibit major commercial, industrial, and public uses from installing and/or using shared energy facilities, such as district heating/cooling systems, solar water heating, photovoltaic grids, and cogeneration systems.

Site Design Standards. Promote site design standards for new construction consistent with current best practices for energy efficiency and environmentally sound construction techniques.

Energy Efficiency-based Utility Allowance. Encourage use of energy efficiency-based utility allowance schedule in all affordable housing.

Zero-Net–Energy New Construction. Develop and implement programs that support the State’s goals related to residential and commercial new construction being net-zero-energy.

Energy Efficiency Codes and Standards. Support successful local implementation of Title 24 building energy codes and Title 20 appliance efficiency standards.

EDUCATION

Energy Resource Center. Establish an energy resource center. The center shall be open to the public and provide energy conservation, energy planning, renewable energy, and energy-efficient building design and retrofit information.

Energy Efficiency Education and Training. Provide community education on energy issues, including the benefits of reduced energy consumption, and increased energy efficiency.

Collaborate with schools and colleges for energy-related research, education, and conservation practices.

Education on Renewable Energy and Distributed Generation. Provide educational and promotional programs that encourage and demonstrate the use of renewable energy and environmentally preferable distributed energy generation and cogeneration systems.

Public Displays. Encourage and assist development of educational displays for exemplary renewable energy, cogeneration, and distributed energy systems installed throughout Humboldt County. Displays should provide county residents and businesses with information on how the systems work and how well they perform; and should inform county residents about the importance, benefits, and associated impacts of developing local energy resources.

Green Building Information. Develop and promote programs to encourage the voluntary adoption of green building standards throughout the county.

Energy Guidelines. Develop energy-efficient guidelines and information handouts and make them available to applicants in the process of obtaining development and land use permits.

Promote Energy Upgrade Opportunities in Consultation with the Humboldt Association of Realtors. Work with the local real estate community to develop and implement programs that support real estate buyers and sellers with energy-efficiency assessments and provide information on upgrades. The objective of this type of program would be to provide assistance to sellers and buyers regarding evaluating what energy upgrades would benefit a property, what incentives and energy-efficiency programs are available, and what types of mortgages or other financing programs are available to fund energy improvement projects.

Public Facilities Energy Study. For public facilities, encourage and facilitate preparation of reports that examine the economic feasibility of using renewable energy systems (including solar electric and solar hot water), cogeneration systems, distributed energy systems, and district heating systems.

Energy Sustainability Awards Program. Initiate awards program for local efforts that reflect the energy sustainability goals (i.e. efficiency and renewable energy) and objectives of the Comprehensive Energy Action Plan and General Plan Energy Element.

Facility Benchmarking. Assist local governments and businesses with facility benchmarking to evaluate and track the energy performance of non-residential buildings consistent with the benchmarking requirements of AB 1103.

Efficient Driving Practices. Promote the use of energy-efficient driving practices that have been shown to improve fuel efficiency by as much as 30%, such as obeying the speed limit, avoiding aggressive acceleration, and eliminating unnecessary engine idling.

WATER AND WASTE

Water Conservation Management Plan. Promote the development and implementation of a countywide water conservation management plan, which is based on conservation of energy and water resources to maintain and promote water conservation and water recycling programs as a means of conserving energy.

Water Conservation Education Program. Work with local public water agencies to develop water conservation education programs.

Water Conservation. Encourage local water providers to implement water conservation measures cooperatively, using state-mandated powers to reduce energy consumption at water facilities associated with various phases of pumping, distribution, treatment, and reclamation.

Wastewater and Reclaimed Water Efficiency. Encourage use of properly treated reclaimed waste water as “greywater” for appropriate municipal, industrial, commercial, and residential landscaping applications.

On-site Waste Management. Promote use of source separation recycling storage areas for all multiple-unit residential developments, and commercial developments.

Life-cycle Energy Analysis. Support the evaluation of the up-stream energy costs of products and materials and encourage the selection of product options that have low total life-cycle energy costs.

TRANSPORTATION

Balanced Modes of Travel. Encourage energy-efficient, health-promoting modes of travel such as walking, bicycling, and public transit.

Commuter Incentives. Encourage businesses and government entities to offer incentives and resources to employees that support commuting by public transportation, bicycling, walking, and car pooling.

Vehicle Fleets. Encourage local government and private fleets to maximize the use of high-efficiency vehicles and alternative fuels.

Alternative Fuels. Encourage when appropriate the use of alternative fuels that will reduce greenhouse gas emissions, which may include hydrogen, biodiesel, ethanol and natural gas.

Complete Streets and Bike Routes. Support and encourage local jurisdictions’ use of “Complete Streets” design principles that facilitate multi-modal transportation options and support the development of bike and pedestrian routes within and between local communities.

Transit-Oriented Development. Support and encourage, where appropriate, transit-oriented development that facilitates increased utilization of local public transportation networks.

Shipping Efficiency. Support the implementation of trucking efficiency technologies and best-practices, including idle-reduction technologies, aerodynamics-improving retrofits, and low rolling resistance tires. Support the analysis of other potential transportation modes that could provide efficient shipping alternatives such as barge and rail.

Vehicle-to-Grid Connection. Promote integration of motor vehicles with the electric grid, including battery electric vehicles, fuel-cell vehicles, plug-in hybrid electric vehicles, and solar electric vehicles. Evaluate development status of vehicle-to-grid interconnect standards and the use of grid-connected vehicles for short-term energy storage.

Biofuels Development. Promote use of waste oils and other biomass sources for biofuels production. Focus on waste oils and other biomass that are not already being used for other purposes, and explore potential opportunities and issues of new technologies for biofuels production from local resources.

Telecommunication Systems. The reduction of automobile trips shall be encouraged through support for telecommuting and broad-band telecommunication systems that connect outlying residents and businesses with services in core (urban) areas.

ENERGY GENERATION AND UTILITY SERVICES

Renewable Energy Resources. Promote policies which seek to meet new generation needs with renewable energy resources, distributed generation, and cogeneration.

Diversity in Local Sources. Pursue development of a diverse, locally produced energy supply, with an emphasis on renewable resources, that is price-competitive in the California market and that can be generated in a way that minimizes adverse environmental impacts.

Intermittent Renewable Resource Development. Encourage local intermittent renewable resources that can significantly contribute to the county's electrical generation.

Development of Distributed Generation. Encourage studies to identify key facilities throughout the county that would benefit from distributed generation and cogeneration energy systems. Encourage development of responsive environmentally preferable distributed generation and cogeneration energy systems where appropriate. Encourage and publicize demonstration sites.

Small-scale Biomass Generation Sites. Monitor feasibility of smaller and/or mobile biomass electric generators fed with wood waste and very small diameter logs (e.g., from thinning for fire safety and timber harvest slash in National Forest areas). If/when technology proves feasible and cost effective, promote its use in county areas near National Forests where existing electric transmission lines are available; support projects to convert biomass into competitively priced renewable energy.

Use of Waste Biomass for Energy Production. Promote forest fuel-reduction programs that provide sustainable forest practices, fire safety, and the use of forest biomass as an energy source. Develop and maintain statistics on the use and availability of forest waste biomass resources for energy production.

Biogas Development. Support HWMA in the development of the use of biogas at the Cummings Road Landfill and in the development of a food waste digester. Develop and publicize dairy biogas demonstration sites and work with local farm organizations to promote dairy biogas energy systems where appropriate. Publicize the use of biogas at existing local wastewater treatment facilities and encourage its use at additional facilities where appropriate.

Support Wave and Tidal Energy Demonstration Projects. Promote and support local wave and tidal energy systems research and development. Work with utilities and private companies to develop wave and tidal energy demonstration projects.

Large-Scale Wind Energy. Provide information about the potential for cost effective commercial-scale wind farms in the county and in off-shore areas adjacent to the county.

Educate the public about the benefits and impacts of wind energy systems. Work with utilities and private companies to develop off-shore wind energy demonstration projects.

Natural Gas Development. Support efforts to develop local natural gas resources consistent with oil and gas policies and standards.

Small Hydroelectric Development. Support local efforts to develop cost-effective, environmentally sensitive, small-scale, run-of-the-river hydroelectric facilities in the county. Encourage appropriate local agencies to prepare an updated assessment of small hydroelectric resources potential in the county.

Solar Energy Development. Support local efforts to develop solar electric systems and solar hot water systems in the county. Support development of local training programs for solar contractors and installers. Educate the public about the benefits of solar energy systems. Develop a database of solar energy systems installed in the county. Develop programs that facilitate an increase in the number of solar energy systems in the County.

Energy Grid Connection. Promote appropriate small-scale energy generation where cost-effective connections to the distribution system are available or planned.

Reduce Regulatory Barriers. Support efforts to increase the efficiency of the permitting process and reduce any excessive regulatory barriers to renewable energy and distributed generation projects. Work to develop proactive strategies to reduce and mitigate the environmental and community impacts of potential energy projects.

Energy Feasibility Study. Encourage and support feasibility studies of local wind, solar, hydro-power, and ocean energy resources.

Utility Management. Serve as a forum to identify the best local energy delivery mechanism. Options to be considered include continuing with Investor Owned Utility, forming a municipal utility, and community choice aggregation.

Investor-Owned Utility Effectiveness. Review the effectiveness of PG&E in meeting Humboldt County's long-term energy needs.

Municipal Utility Feasibility. Explore the feasibility of establishing a local municipal utility.

Community Choice Aggregation. Explore the feasibility of becoming community-choice aggregator.

Renewable Energy Portfolio Standard. Review compatible energy resource development projects that would assist the State of California in meeting "renewable portfolio standard" goals. Work with appropriate regulatory agencies to investigate transmission upgrades that may be to needed to support the development of renewable energy resources in Humboldt County.

Pursue Feasibility Studies for Utility Resource Portfolio. Review proposals for new local electric power facilities, with a focus on fuel diversity, environmental concerns, and market uncertainties that are increasingly important in electric utility resource planning. Make recommendations on preferred alternatives that are consistent with the County's goals for energy security and sustainability.

Current Status of CAPE Strategies: July 2012

This table will be updated in the future as status changes

The table below summarizes the CAPE strategies that were referred to RCEA by the County, and which have been reviewed and approved (or deleted) by the RCEA Board.

STATUS KEY:

A: RCEA is currently **actively engaged** in these strategies.

I: RCEA is somewhat engaged in these strategies, but staff has identified them as warranting an **increase in activity**.

H: A strategy that RCEA staff has identified as a **high priority** to begin addressing in the near-term, due to urgency and alignment with RCEA's mission.

L: A strategy that RCEA staff has identified as a **lower priority** item, either due to organizational resource constraints, limited ability/authority to influence, or not a core element of RCEA's mission.

RCEA PROGRAMS:

RCEA has current programs that relate to CAPE strategies; these program alignments are listed in the "notes" column:

Redwood Coast Energy Watch (RCEW): A partnership between Pacific Gas & Electric and the Redwood Coast Energy Authority to offer comprehensive locally-based energy efficiency services in Humboldt County. This program provides education, incentives, and project management to help clients save energy and lower their costs.

Renewable Energy Secure Communities (RESCO): A partnership with Humboldt State University's Schatz Energy Research Center with the goal of developing a strategic action plan for Humboldt County to develop its local renewable energy resources in an effort to meet 75% to 100% of the local electricity demand as well as a significant fraction of heating and transportation energy needs.

CAPE ITEM	STATUS	NOTES
REGIONAL ENERGY PLANNING & COORDINATION		
Regional Energy Authority (REA). The Redwood Coast Energy Authority shall serve as the REA for Humboldt County.	A	
Regional Energy Forum. Serve as a forum for addressing countywide energy issues.	I	
Coordinated Regional Energy Planning. Facilitate coordinated strategic energy planning within Humboldt County.	I	
Regional Energy Funding. Offer support and act as the fiscal agent and funding clearinghouse for countywide energy programs.	A	
Energy Policies and Plans. Encourage other jurisdictions and entities, including the cities in Humboldt County, to adopt and implement sound energy plans and policies, to include energy elements and/or energy policies in their general plans and ordinances. Advocate and disseminate energy planning strategies, policies, and other information.	A	RCEW
Energy Elements. Encourage the adoption of energy elements in other local and regional jurisdictions.	A	RCEW
Energy Element Review. Periodically review local Energy Elements and recommend updates, as necessary, to reflect changing technologies for the generation, transmission, and efficient use of energy.	I	RCEW
Climate Action Planning. Work with local jurisdictions to complete greenhouse gas inventories, set greenhouse gas reduction targets, and develop climate action plans.	I	RCEW
ENERGY RELIABILITY & SECURITY		
Climate Change Adaptation. Work with other local entities to conduct a climate change risk assessment and develop an adaptation plan consistent with the best practices guidance provided by the California Natural Resources Agency and California Emergency Management Agency.	H	
Minimize Energy Interruptions. Work with local utility providers to minimize impact of power outages.	L	
Energy Emergency Planning. Assist the Humboldt County Office of Emergency Services with the preparation and periodic update of state-mandated energy-related emergency planning.	L	
Energy Emergency Response Procedures. Assist the Humboldt County Office of	H	

Emergency Services in the preparation of energy emergency response procedures for the Humboldt County Emergency Response Plan.		
Energy Supply and Transmission/Distribution Report. Review regional energy supply and transmission/distribution reports, and provide comments as appropriate.	I	RESCO
Transmission Assessments and Monitoring. Encourage development of long-term transmission assessments and, if necessary, electrical and natural gas transmission grid expansion plans. Monitor local electricity and natural gas transmission system planning to ensure that projected growth areas are adequately served and to support the development of local renewable energy projects.	I	RESCO
Interconnected (Looped) Electrical Grid. Work with PG&E to evaluate an interconnected (looped) electrical grid for the county.	L	
ECONOMIC DEVELOPMENT		
Emerging Energy Technologies. Support the development of emerging energy technology from local sources—such as Humboldt State University’s Industrial Technology Department and the Schatz Energy Research Center—local innovators and inventors, as well as from non-local sources.	I	RESCO
Development Incentives. Collaborate with local economic development entities to identify opportunities for developing jobs in the field of energy conservation, efficiency, and renewable sources.	I	
Business Attraction. Collaborate with local economic development entities to attract technology developers, manufactures, and energy service providers to locate operations in the County when appropriate.	I	
Proactive Development Support. Collaborate with local jurisdictions to identify and pre-assess locations and facilities that could appropriately support energy generation projects and or other energy-related business ventures.	H	
Local Energy Investment. Work with local economic development entities and financial institutions to develop programs and resources that facilitate local community investment in and/or ownership of energy efficiency and renewable energy projects.	H	
Workforce Development. Work with other local entities to provide training and continuing education that develops and maintains a qualified local workforce available to implement energy efficiency upgrades, renewable energy projects, and advanced-vehicle technology deployment.	I	RCEW
Energy Project Financing. Work with local economic development entities and/or financial institutions to develop and implement financing programs that enable residents	H	

and businesses to implement energy efficiency and renewable energy projects.		
BUILT ENVIRONMENT EFFICIENCY		
Energy Audits and Retrofits. Encourage full knowledge of the costs and benefits (including product stewardship issues) of energy efficiency retrofitting in all structures and support programs that encourage and facilitate energy audits for all existing buildings and developments.	A	RCEW
Retrofits in Existing Buildings. Support public policies, and develop and implement programs, which encourage energy efficiency and renewable energy retrofits in existing buildings while maintaining architectural and historical integrity.	A	RCEW
Energy-efficient Equipment. Encourage the use of the most energy-efficient equipment for space and water heating, ventilation, lighting, refrigeration, and air conditioning in all new buildings and developments, including residential and commercial facilities. Solar water heating and solar electric systems shall be encouraged where solar access is available.	A	RCEW
“No-Regrets” Solar Planning. Encourage new construction and renovations/remodeling of appropriate scale to incorporate solar-friendly “no-regrets” construction features. This shall include the installation of electrical and plumbing connections for potential future solar electric and solar hot-water systems, proper solar orientation, and adequate unobstructed south facing roof slopes where solar energy equipment can be installed.	H	
Shared Energy Facilities. Support public policies to reduce barriers that may inhibit major commercial, industrial, and public uses from installing and/or using shared energy facilities, such as district heating/cooling systems, solar water heating, photovoltaic grids, and cogeneration systems.	H	
Site Design Standards. Promote site design standards for new construction consistent with current best practices for energy efficiency and environmentally sound construction techniques.	I	RCEW
Energy Efficiency-based Utility Allowance. Encourage use of energy efficiency-based utility allowance schedule in all affordable housing.	L	
Zero-Net–Energy New Construction. Develop and implement programs that support the State’s goals related to residential and commercial new construction being net-zero-energy.	H	
Energy Efficiency Codes and Standards. Support successful local implementation of Title 24 building energy codes and Title 20 appliance efficiency standards.	I	RCEW

EDUCATION		
Energy Resource Center. Establish an energy resource center. The center shall be open to the public and provide energy conservation, energy planning, renewable energy, and energy-efficient building design and retrofit information.	A	RCEW
Energy Efficiency Education and Training. Provide community education on energy issues, including the benefits of reduced energy consumption, and increased energy efficiency. Collaborate with schools and colleges for energy-related research, education, and conservation practices.	A	RCEW
Education on Renewable Energy and Distributed Generation. Provide educational and promotional programs that encourage and demonstrate the use of renewable energy and environmentally preferable distributed energy generation and cogeneration systems.	I	RESCO
Public Displays. Encourage and assist development of educational displays for exemplary renewable energy, cogeneration, and distributed energy systems installed throughout Humboldt County. Displays should provide county residents and businesses with information on how the systems work and how well they perform; and should inform county residents about the importance, benefits, and associated impacts of developing local energy resources.	I	RCEW
Green Building Information. Develop and promote programs to encourage the voluntary adoption of green building standards throughout the county.	A	RCEW
Energy Guidelines. Develop energy-efficient guidelines and information handouts and make them available to applicants in the process of obtaining development and land use permits.	I	RCEW
Promote Energy Upgrade Opportunities in Consultation with the Humboldt Association of Realtors. Work with the local real estate community to develop and implement programs that support real estate buyers and sellers with energy-efficiency assessments and provide information on upgrades. The objective of this type of program would be to provide assistance to sellers and buyers regarding evaluating what energy upgrades would benefit a property, what incentives and energy-efficiency programs are available, and what types of mortgages or other financing programs are available to fund energy improvement projects.	I	RCEW
Public Facilities Energy Study. For public facilities, encourage and facilitate preparation of reports that examine the economic feasibility of using renewable energy systems (including solar electric and solar hot water), cogeneration systems, distributed energy systems, and district heating systems.	I	RCEW
Energy Sustainability Awards Program. Initiate awards program for local efforts that reflect the energy sustainability goals (i.e. efficiency and renewable energy) and objectives	I	RCEW

of the Comprehensive Energy Action Plan and General Plan Energy Element.		
Facility Benchmarking. Assist local governments and businesses with facility benchmarking to evaluate and track the energy performance of non-residential buildings consistent with the benchmarking requirements of AB 1103.	A	RCEW
Efficient Driving Practices. Promote the use of energy-efficient driving practices that have been shown to improve fuel efficiency by as much as 30%, such as obeying the speed limit, avoiding aggressive acceleration, and eliminating unnecessary engine idling.	H	
WATER AND WASTE		
Water Conservation Management Plan. Promote the development and implementation of a countywide water conservation management plan, which is based on conservation of energy and water resources to maintain and promote water conservation and water recycling programs as a means of conserving energy.	L	
Water Conservation. Encourage local water providers to implement water conservation measures cooperatively, using state-mandated powers to reduce energy consumption at water facilities associated with various phases of pumping, distribution, treatment, and reclamation.	L	
Wastewater and Reclaimed Water Efficiency. Encourage use of properly treated reclaimed waste water as “greywater” for appropriate municipal, industrial, commercial, and residential landscaping applications.	L	
On-site Waste Management. Promote use of source separation recycling storage areas for all multiple-unit residential developments, and commercial developments.	L	
Life-cycle Energy Analysis. Support the evaluation of the up-stream energy costs of products and materials and encourage the selection of product options that have low total life-cycle energy costs.	L	
TRANSPORTATION		
Balanced Modes of Travel. Encourage energy-efficient, health-promoting modes of travel such as walking, bicycling, and public transit.	L	
Commuter Incentives. Encourage businesses and government entities to offer incentives and resources to employees that support commuting by public transportation, bicycling, walking, and car pooling.	L	
Vehicle Fleets. Encourage local government and private fleets to maximize the use of high-efficiency vehicles and alternative fuels.	I	Regional Plug-in Electric Vehicle Project

Alternative Fuels. Encourage when appropriate the use of alternative fuels that will reduce greenhouse gas emissions, which may include hydrogen, biodiesel, ethanol and natural gas.	I	RESCO; Regional Plug-in Electric Vehicle Project
Complete Streets and Bike Routes. Support and encourage local jurisdictions' use of "Complete Streets" design principles that facilitate multi-modal transportation options and support the development of bike and pedestrian routes within and between local communities.	L	
Transit-Oriented Development. Support and encourage, where appropriate, transit-oriented development that facilitates increased utilization of local public transportation networks.	L	
Shipping Efficiency. Support the implementation of trucking efficiency technologies and best-practices, including idle-reduction technologies, aerodynamics-improving retrofits, and low rolling resistance tires. Support the analysis of other potential transportation modes that could provide efficient shipping alternatives such as barge and rail.	H	
Vehicle-to-Grid Connection. Promote integration of motor vehicles with the electric grid, including battery electric vehicles, fuel-cell vehicles, plug-in hybrid electric vehicles, and solar electric vehicles. Evaluate development status of vehicle-to-grid interconnect standards and the use of grid-connected vehicles for short-term energy storage.	H	RESCO; Regional Plug-in Electric Vehicle Project
Biofuels Development. Promote use of waste oils and other biomass sources for biofuels production. Focus on waste oils and other biomass that are not already being used for other purposes, and explore potential opportunities and issues of new technologies for biofuels production from local resources.	H	RESCO
Telecommunication Systems. The reduction of automobile trips shall be encouraged through support for telecommuting and broad-band telecommunication systems that connect outlying residents and businesses with services in core (urban) areas.	L	
ENERGY GENERATION AND UTILITY SERVICES		
Renewable Energy Resources. Promote policies which seek to meet new generation needs with renewable energy resources, distributed generation, and cogeneration.	A	RESCO
Diversity in Local Sources. Pursue development of a diverse, locally produced energy supply, with an emphasis on renewable resources, that is price-competitive in the California market and that can be generated in a way that minimizes adverse environmental impacts.	I	RESCO
Intermittent Renewable Resource Development. Encourage local intermittent renewable resources that can significantly contribute to the county's electrical generation.	I	RESCO

<p>Development of Distributed Generation. Encourage studies to identify key facilities throughout the county that would benefit from distributed generation and cogeneration energy systems. Encourage development of responsive environmentally preferable distributed generation and cogeneration energy systems where appropriate. Encourage and publicize demonstration sites.</p>	I	RESCO
<p>Small-scale Biomass Generation Sites. Monitor feasibility of smaller and/or mobile biomass electric generators fed with wood waste and very small diameter logs (e.g., from thinning for fire safety and timber harvest slash in National Forest areas). If/when technology proves feasible and cost effective, promote its use in county areas near National Forests where existing electric transmission lines are available; support projects to convert biomass into competitively priced renewable energy.</p>	I	RESCO
<p>Use of Waste Biomass for Energy Production. Promote forest fuel-reduction programs that provide sustainable forest practices, fire safety, and the use of forest biomass as an energy source. Develop and maintain statistics on the use and availability of forest waste biomass resources for energy production.</p>	I	RESCO
<p>Biogas Development. Support HWMA in the development of the use of biogas at the Cummings Road Landfill and in the development of a food waste digester. Develop and publicize dairy biogas demonstration sites and work with local farm organizations to promote dairy biogas energy systems where appropriate. Publicize the use of biogas at existing local wastewater treatment facilities and encourage its use at additional facilities where appropriate.</p>	I	RESCO
<p>Support Wave and Tidal Energy Demonstration Projects. Promote and support local wave and tidal energy systems research and development. Work with utilities and private companies to develop wave and tidal energy demonstration projects.</p>	I	RESCO
<p>Large-Scale Wind Energy. Provide information about the potential for cost effective commercial-scale wind farms in the county and in off-shore areas adjacent to the county. Educate the public about the benefits and impacts of wind energy systems. Work with utilities and private companies to develop off-shore wind energy demonstration projects.</p>	I	RESCO
<p>Natural Gas Development. Support efforts to develop local natural gas resources consistent with oil and gas policies and standards.</p>	L	
<p>Small Hydroelectric Development. Support local efforts to develop cost-effective, environmentally sensitive, small-scale, run-of-the-river hydroelectric facilities in the county. Encourage appropriate local agencies to prepare an updated assessment of small hydroelectric resources potential in the county.</p>	I	RESCO
<p>Solar Energy Development. Support local efforts to develop solar electric systems and solar hot water systems in the county. Support development of local training programs for</p>	I	RESCO

solar contractors and installers. Educate the public about the benefits of solar energy systems. Develop a database of solar energy systems installed in the county. Develop programs that facilitate an increase in the number of solar energy systems in the County.		
Energy Grid Connection. Promote appropriate small-scale energy generation where cost-effective connections to the distribution system are available or planned.	I	RESCO
Reduce Regulatory Barriers. Support efforts to increase the efficiency of the permitting process and reduce any excessive regulatory barriers to renewable energy and distributed generation projects. Work to develop proactive strategies to reduce and mitigate the environmental and community impacts of potential energy projects.	H	
Energy Feasibility Study. Encourage and support feasibility studies of local wind, solar, hydro-power, and ocean energy resources.	A	RESCO
Utility Management. Serve as a forum to identify the best local energy delivery mechanism. Options to be considered include continuing with Investor Owned Utility, forming a municipal utility, and community choice aggregation.	A	RESCO
Investor-Owned Utility Effectiveness. Review the effectiveness of PG&E in meeting Humboldt County's long-term energy needs.	A	RESCO
Municipal Utility Feasibility. Explore the feasibility of establishing a local municipal utility.	A	RESCO
Community Choice Aggregation. Explore the feasibility of becoming community-choice aggregator.	A	RESCO
Renewable Energy Portfolio Standard. Review compatible energy resource development projects that would assist the State of California in meeting "renewable portfolio standard" goals. Work with appropriate regulatory agencies to investigate transmission upgrades that may be needed to support the development of renewable energy resources in Humboldt County.	A	RESCO
Pursue Feasibility Studies for Utility Resource Portfolio. Review proposals for new local electric power facilities, with a focus on fuel diversity, environmental concerns, and market uncertainties that are increasingly important in electric utility resource planning. Make recommendations on preferred alternatives that are consistent with the County's goals for energy security and sustainability.	I	RESCO