



INDUSTRIAL + COMMERCIAL

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Industrial + Commercial



In 2000, the Commercial and Industrial sector was the largest contributor to the City of Benicia’s total greenhouse gas emissions. The Emissions Inventory indicates that approximately 95 percent of the Community’s total emissions are related to commercial and industrial uses; 20% of these emissions are attributed to the Valero Refinery and Port of Benicia.

Greenhouse gas emissions related to industrial and commercial uses include business operations, building efficiency, and the transportation of goods.

This focus area identifies strategies to reduce local greenhouse gas emissions through industrial and commercial building efficiency, business operations, and large emitters. Large emitters include the Valero Refinery and Port of Benicia. Greenhouse gas emissions related to the Valero Refinery and Port of Benicia are primarily regulated by federal and State agencies.

Adaptation

Climate change may impact industrial and commercial businesses in Benicia in several ways. Sea level rise could increase flooding for businesses and infrastructure in low-lying areas along the Carquinez shoreline, affecting port and refinery operations. Demand in electricity for heating, ventilation, and air-conditioning (HVAC) systems will increase if heat waves intensify. Businesses may experience a rise in costs of goods as a result of water scarcity and increased fuel costs.

Co-Benefits Of Industrial + Commercial Objectives

- Improved Regional Air Quality
- Reduced transportation expenses for business
- Water Conservation
- Improved Business Community Alliance
- Reduced business utilities cost

Objective IC-1: Reduce Energy Consumption in Industrial and Commercial Buildings 20% by 2020



INDUSTRIAL AND COMMERCIAL BUILDINGS

Increasing the energy efficiency of buildings is a key strategy to reduce greenhouse emissions, and operational and maintenance costs. Adopting a green building ordinance, among other strategies, will increase building efficiency standards for new construction or major retrofits. The United States Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) is the regional standard for industrial and commercial buildings.

Industry + Commercial Objective Table	Emissions Reduction Type	Emissions Reduction
Objective IC-1: Reduce Energy Consumption in Industrial and Commercial and Buildings 20% by 2020	Community	
Objective IC-2: Increase Operational Efficiency 20% by 2020	Community	
Objective IC-3: Encourage the Port of Benicia to Implement Emissions Reduction Measures	Community	n/a
Objective IC-4: Encourage the Valero Refinery to Continue to Reduce Emissions	Community	n/a

Existing Actions

The Downtown Mixed Use Master Plan encourages green building practices and suggests priority permitting as an incentive. The Building Division has also created green building display boards for public areas of City Hall.

◆ Strategy IC-1.1. Building Audit and Efficiency Program



A comprehensive building energy audit program should be established for industrial and commercial structures. The program should include a partnership with PG&E and other relevant stakeholders to promote existing no-cost energy audit programs. For businesses that do not qualify for the program, the City should establish an audit program free of cost.

PG&E's program for large-scale energy users provides cost-free audits performed by qualified engineering firms and include a comprehensive report identifying efficiency measures, such as, weatherization, increased insulation, window seals, and equipment replacement recommendations. The result is increased efficiency, decreased overhead, and a reduction in greenhouse gas emissions and in operating and maintenance costs.

Implementation Actions

- Establish an education and outreach component for businesses that includes best management practices for energy efficiency, water conservation, waste management and heating/ventilation/air conditioning (HVAC);
- Develop partnerships with PG&E and other relevant stakeholders, which includes business outreach and education programs;
- Identify businesses that qualify for existing audit programs;
- Establish an audit program for businesses that do not qualify for such programs.

CO2EMT Reduction Range

- 1.5%-3% of Objective IC-1.

◆ Strategy IC-1.2. Mandate Building Performance Certificates



Building performance certificates display the potential energy performance of a building and identifies areas of improvement, similar to the Environmental Protection Agency fuel economy estimates for new automobiles. The certificate would be presented at the time of sale or rent and would provide transparency of a building's efficiency, giving consumers upfront data.

Implementation Actions

- Develop criteria to measure building performance;
- Establish program guidelines;
- Adopt an ordinance to mandate building performance certificates.

CO2EMT Reduction Range

- Unknown Reductions.

◆ Strategy IC-1.3. Require LEED Certification for New Industrial and Commercial Buildings Larger than 5,000 Square Feet.



The LEED certification system utilizes green building practices and design elements to accrue points on a checklist that correspond to incremental levels of certification. The green building criteria incorporate site design, energy consumption, indoor air quality, and construction materials.

Implementation Action

- Adopt a green building ordinance provision requiring LEED certification for new industrial and commercial construction over 5,000 square feet.

CO2EMT Reduction Range

- 8%-10% of Objective IC-1.

◆ Strategy IC-1.4. Commercial Energy Conservation Ordinance



Require commercial structures to undergo minimum energy efficiency/weatherization upgrades at the time of major renovation. Required upgrades should be established by determining appropriate tiered thresholds, based on construction valuation and/or building addition square footage.

Implementation Actions

- Establish program parameters and definitions;
- Adopt a Commercial Energy Conservation Ordinance.

CO2EMT Reduction Range

- 89%-100% of Objective IC-1.

◆ Strategy IC-1.5. Provide Green Building Consulting and Technical Assistance



Designating a green building staff person will help ensure that projects are planned and constructed to meet adopted standards. This person would be made available to assist homeowners, developers, and contractors and will also be responsible for putting together educational handouts, displays, etc.

Implementation Actions

- Formalize assistance program;
- Train City staff, as necessary.

CO2EMT Reduction Range

- Not Applicable. This strategy supports to IC-1.3 and other strategies.

Objective IC-2: Increase Operational Efficiency 20% by 2020



BUSINESS OPERATIONS

Industrial and commercial businesses contribute a large portion of the Community's total greenhouse gas emissions. In addition to increasing the efficiency of commercial and industrial buildings, a change in operations is required for further emission reductions. Curbside recycling is an important component and has been addressed in the Solid Waste focus area (Strategy SW-2.2)

Existing Actions

Actions to reduce greenhouse gas emissions related to business operations have been limited, thus presenting an opportunity area.

The County of Solano is part of the Bay Area Green Business Program, which is a voluntary program to certify businesses that work to conserve natural resources, reduce pollution and minimize waste. In July of 2009, Benicia's first business was certified by the program.

◆ Strategy IC-2.1. Promote Green Business Certification Program



Solano County's participation in the Bay Area's Green Business Program³⁰ is an important first step in engaging the private sector in the green conversation. The City can work with the county to come up with innovative outreach strategies to encourage participation

Implementation Action

- Work with Solano County staff to tailor ongoing outreach programs, including presentations to the Chamber of Commerce, Benicia Industrial Park Association, Benicia Main Street Program, Community Sustainability Commission, Economic Development Board, and various service organizations.

CO2EMT Reduction Range

- 100% of Objective IC-2.

30) The Bay Area Green Business Program encourages businesses to implement greenhouse gas reduction strategies. To qualify, businesses need to adhere to a specified number of environmental regulations, encouraging businesses to conserve natural resources, reduce pollution, and reduce waste.

◆ **Strategy IC-2.2. Establish a Green Business Committee**



A green business committee would be responsible for promoting sustainable business practices through education and outreach to local businesses. The committee can be formed through a partnership with the Economic Development Board, Benicia Main Street Program, Chamber of Commerce, and the Community Sustainability Commission. In addition to education and outreach, the committee would be responsible for working with City staff and the Bay Area Green Business Program to tailor outreach programs for Benicia’s commercial and Industrial sector.

Implementation Action

- Coordinate with Benicia Main Street and the Chamber of Commerce to establish a green business committee.

CO2EMT Reduction Range

- Not Applicable. This strategy supports to IC-2.1.

Objective IC-3: Encourage the Port of Benicia to Implement Emissions Reduction Measures

CO2EMT estimates not available

PORT OF BENICIA

The Port of Benicia is privately owned by Amports and is one of the industrial park’s largest landowners; their operations are primarily regulated by Federal and State authorities.³¹ The Emissions Inventory includes data for the automobile cargo being unloaded at the Port, but does not include emissions generated from maritime traffic in the Carquinez Straight or for Port operations, such as cleaning each car that is shipped in and out of the Port Facility.

Existing Actions

The Port of Benicia is a member of a regional steering committee that is completing an emissions inventory of all Bay Area ports. Port management is currently investigating the feasibility of electric cars for its fleet uses and upgrades to interior building lights with timing and sensors along with other efficiency improvements.

◆ **Strategy IC-3.1. Complete Emissions Inventory and Port Efficiency Plan**



Encourage the Port of Benicia to develop an emissions inventory specific to its operations. The inventory could include its vehicle fleet, ship traffic, fuel refilling, paint shop, employee travel, and overall energy consumption. This inventory will provide information regarding the Port’s actual contribution of greenhouse gases, and could be used to prepare a Port sustainability plan.

◆ **Strategy IC-3.2. Decrease Transportation Source Emissions**



The Port should consider emission reduction strategies for ships, trains, and semi-trucks operating within the Port, similar to those being required of the municipal fleet. The Port should also encourage ships with which it does business to use higher-grade diesel fuels by offering incentives to those companies.

The Port’s geographic location and proximity to various modes of transportation (truck, rail, etc) makes it a desirable place of entry for imported automobiles, which is the Port’s primary function. Decreasing the number of automobiles processed by semi-truck and increasing the use of freight trains for car shipment would have a large impact on greenhouse gas emissions. An anti-idling policy may reduce tail-pipe emissions during loading and unloading of cargo.

31) The pier and shoreline are public trust lands granted by the state to the City of Benicia to maintain in trust for the public. The lands are leased to Amports for uses consistent with the public trust doctrine.

Objective IC-4: Encourage the Valero Refinery to Continue to Reduce Emissions

CO₂EMT estimates not available

VALERO REFINERY

The Valero Refinery is primarily regulated by State and Federal authorities as a large stationary emitter of greenhouse gases. Emissions produced by Valero are largely a result of refining processes.

Existing Actions

The Valero Improvement Project (VIP) began the permitting approval process in 2002 and construction began in 2009. The VIP includes improving efficiency of several industrial processes that will result in a reduction in specific greenhouse gas emissions. These efficiency improvements will allow Valero to increase refining capacity while achieving a zero net gain in carbon dioxide equivalence (CO₂EMT) emissions. As a condition to the City Use Permit, Valero agreed via the Good Neighbor Steering Committee settlement agreement, to fund \$14,000,000 of water conservation, energy efficiency, and open space conservation projects, among other things. Included in this is \$200,000 per year for three years to fund implementation of the Climate Action Plan.

◆ Strategy IC-4.1. Continue Implementing Capital Improvement Programs



Capital Improvement Programs include regular replacement of inefficient equipment to maintain efficient industrial processes. Improvement programs include increasing Butamer production, recycled water consumption, replacement of floating roofs on storage tanks, and increase use of co-generation. Frequent capital investment programs can ensure that the refinery utilizes the most current equipment and remains economically competitive in future markets.

◆ Strategy IC-4.2. Investigate On-site Energy Production



Generating on-site energy reduces fluctuation in energy cost and increases the efficiency of the power generated because of reduced transmission loss. The refinery should aggressively pursue increased on-site energy production. As future demand and processes change, Valero should consider becoming operationally independent for energy supply. On-site energy production measures include photovoltaic, wind power, and an increased number of co-generation systems, as well as the exploration of fuel cell technologies for energy storage.

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