



# ENERGY

## INTERRELATED ACTIONS



Green Buildings



Alternative Fuels



Green Jobs/Business

Energy is an important resource in today's society. However, it is almost invisible—most of us don't think about the energy used by a light bulb, computer, or air conditioner, so it can be easy to forget about the effects of this energy on our environment, our economy and our lives.

Energy use is a vital component of sustainability because the greenhouse gas emissions associated with electricity, natural gas, and transportation fuel use is the primary contributor to climate change. Climate change has the potential to threaten our coastal City by rising sea level, increased storm activity, and warmer weather.

Dependence on fossil fuel-based energy sources also undermines our nation's economy and security. The supply of coal for our power plants and natural gas to heat our homes will not last forever and investing now in alternative sources of energy like solar, wind, and thermal will avert a supply and demand crisis and soaring energy costs in the future.

Because energy is still relatively abundant and inexpensive, we often use more of it than we really need. This is an unnecessary waste of money and resources. In 2007, the residents and businesses of Long Beach used over 2.9 billion kilowatt-hours of electricity. Existing technologies provide many opportunities to reduce this number by increasing energy efficiency. Efficient use is an important and cost effective technique to reduce our energy consumption.

This section will focus primarily on initiatives and actions to reduce our carbon footprint and become more sustainable energy users with regards to stationary energy use, such as electricity and natural gas. The transportation section of the plan will also include actions to help us meet our energy goals. Actions throughout this plan are interrelated and will also contribute to reducing energy demand and greenhouse gas emissions but may be addressed in a different section.

The City of Long Beach recognizes that in order to ensure sustainable sources of energy the City and community must work together by investing in both renewable energy sources and energy efficiency. Clean energy and energy efficiency means not only reducing our energy needs but also saving money, improving public health, and protecting the environment.

## SUSTAINABILITY GOALS

1. Reduce greenhouse gas emissions from City facilities and operations by 15% by 2020
2. Reduce electricity use in City operations by 25% by 2020
3. Reduce natural gas use in City operations by 15% by 2020
4. Facilitate the development of at least 2 Megawatts of solar energy on city facilities by 2020
5. Reduce community electricity use by 15% by 2020
6. Reduce community natural gas use by 10 % by 2020
7. Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020

*Together we can use less energy, use clean and renewable energy and reduce our carbon footprint*



# A HISTORY OF LEADERSHIP



## LONG BEACH AIRPORT SOLAR TREES

The Long Beach Airport installed 6 solar trees that track the movement of the sun to produce electricity. Considered to be one of the most advanced solar systems in the region, the system is expected to create 15,000 kilowatt hours annually, save at least \$5,000 a year and offset nearly a half-million pounds of carbon dioxide emissions over the system's 25-year lifespan - which equates to planting three acres of trees.



## MARK TWAIN LIBRARY

The Mark Twain Library is the City's first LEED building constructed under the City's Green Building Policy. The Library opened in August 2007 and has received a LEED Silver rating, using 27% less energy than a comparable building. The Library is a model for future public buildings that are safe and healthy for people and that protect the environment.



## SOLAR POWERED PAY STATIONS

The City's Redevelopment Agency installed solar powered pay stations at three parking lots in Downtown Long Beach. These new state of the art systems accept cash, coins and credit/debit cards, and replace old 'honor boxes'. Solar powered pay stations are the cutting edge in parking technology and by replacing the old honor boxes with these new pay stations, the City is not only providing more reliable service to customers, but also putting our money where our mouth is in terms of utilizing environmentally friendly innovation.



## SOLAR PANELS ON LONG BEACH CONVENTION CENTER

The Long Beach Convention and Entertainment Center installed a 750 kilowatt solar panel array on its roof. The Long Beach Convention Center has one of the largest public facility solar panel installation on the West Coast and generates over 1 million kilowatt hours of pollution-free electricity annually.



## THE CLIMATE REGISTRY & CALIFORNIA CLIMATE ACTION REGISTRY

The City joined many other municipalities, state agencies, non-profit organizations and businesses by joining The Climate Registry and the California Climate Action Registry as a first step toward aggressively improving energy efficiency and reducing greenhouse gas emissions.

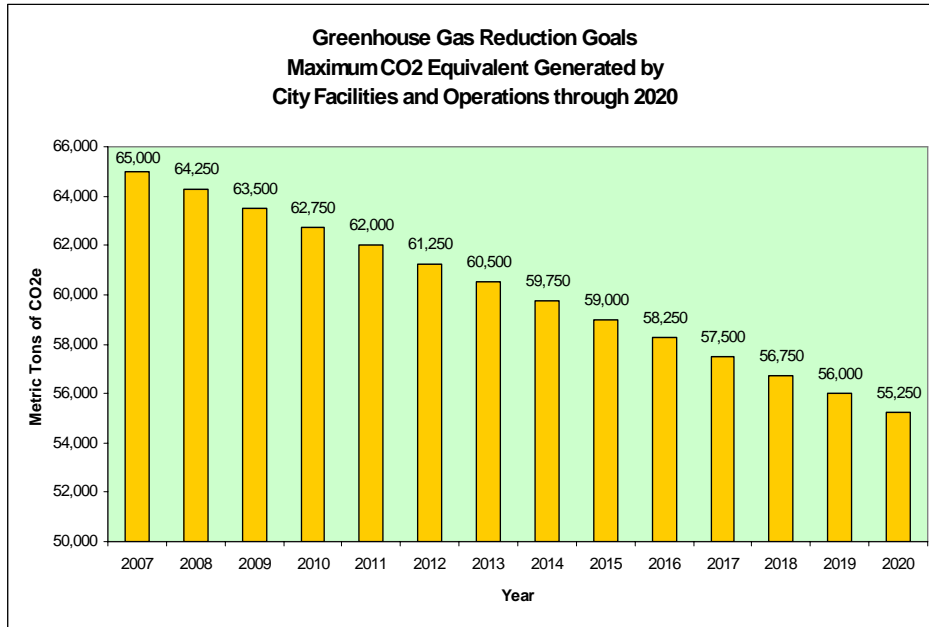


# ENERGY INITIATIVE 1:

Shrink Long Beach's carbon footprint by reducing greenhouse gas emissions

## SUSTAINABILITY GOAL

Reduce greenhouse gas emissions from City facilities and operations by 15% by 2020



*\* The City's greenhouse gas inventory is currently not complete. The complete report and inventory will be available in January 2008.*

## ACTIONS

1. Complete, verify and release an annual City greenhouse gas inventory
2. Create a community greenhouse gas inventory
3. Employ best practices to avoid, minimize or mitigate greenhouse gas emissions for all planning and future development
4. Provide incentives in furtherance of this plan's initiatives and actions to reduce greenhouse gas emissions

## STATISTICS

- 61.5% of the City's carbon emissions are from indirect emissions (buildings, electricity).
- 11.9% of the City's carbon emissions are from stationary emissions (buildings, natural gas).
- 26.5% of the City's carbon emissions are from mobile emissions (vehicles).
- AB 32 Draft Scoping Plan estimates that the per capita carbon footprint in California is 14 tons of carbon dioxide.
- The 2020 goal listed in AB 32 is equal to about 10 tons of CO2 per capita.

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## ENERGY INITIATIVE 2:

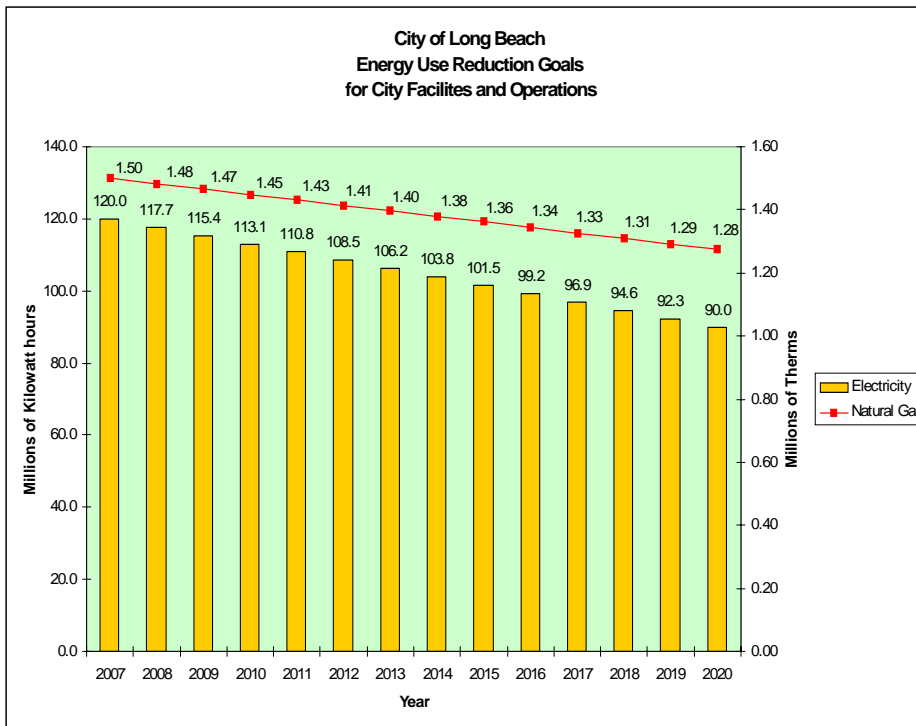
Ensure all of the City of Long Beach's operational needs are met through energy efficiency, conservation and renewable energy sources

### SUSTAINABILITY GOALS

Reduce electricity use in City operations by 25% by 2020

Reduce natural gas use in City operations by 15% by 2020

Facilitate the development of at least 2 Megawatts of solar energy on city facilities by 2020



### STATISTICS

- Almost 16% of energy delivered by SCE to Long Beach residents, businesses and institutions comes from renewable sources (wind, solar)
- In 2007, the City of Long Beach used 119,339,834 kilowatt-hours of electricity to power city facilities and infrastructure.
- In 2007, the City of Long Beach used 1,476,832 therms of natural gas to power city facilities and infrastructure.
- The City has multiple solar projects including solar trees at the Long Beach Airport and solar panels on the Convention Center, the Nature Center, SERRF and the North Long Beach Police Station.
- The City of Long Beach has approximately 2 million square feet of roof space on city facilities.

### ACTIONS

1. Increase energy efficiency in City facilities through ongoing energy audits, retrofits and preventative maintenance
2. Pursue emerging cutting-edge renewable energy technologies as they become available
3. Annually achieve increased savings on City's electricity and gas bills
4. Participate in the SCE's Energy Leader Partnership for municipal governments
5. Require that all new City construction and major renovations are LEED silver
6. Require that all City leases and tenant improvements follow LEED standards and energy efficiency standards are built into all City lease/rental agreements
7. Aggressively apply for grants for energy efficiency programs
8. Partner with other City Departments, local companies and organizations to promote energy efficiency

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# ENERGY INITIATIVE 3:

## Reduce electricity and natural gas consumption of the Long Beach community

### SUSTAINABILITY GOALS

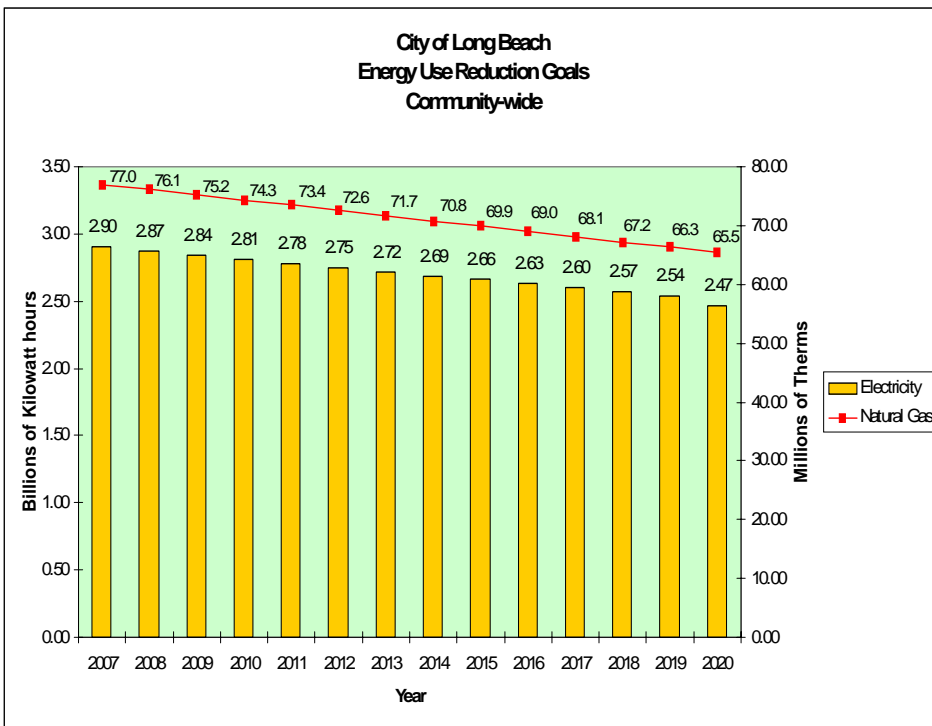
Reduce community electricity use by 15% by 2020

Reduce community natural gas use by 10 % by 2020

Facilitate the development of at least 8 Megawatts of solar energy within the community (private rooftops) by 2020

### STATISTICS

- In 2007, Long Beach residents and businesses used over 2.9 billion kilowatt-hours of electricity.
- There are 179,926 SCE accounts in Long Beach.
- In 2007, Long Beach residents and businesses used 76,936,320 therms of natural gas.
- There are, on average, 139,702 community gas accounts with Long Beach Gas & Oil.
- At least 145 solar installations have been completed in Long Beach that have received solar rebates.
- Long Beach has approximately 270 million square feet of private roof space.
- 1 megawatt of solar energy can power approximately 350 homes.



### ACTIONS

1. Participate in the SCE’s Energy Leader Partnership for community outreach
2. Encourage the community to participate in energy efficiency and conservation programs from LBG0 and SCE and provide energy efficiency education and resources to the community
3. Target specific high electricity use industries for energy efficiency programs
4. Encourage the use of energy efficient products including efficient lighting, energy monitoring systems, cool and green roofs, insulation and efficient HVAC systems
5. Encourage the community to invest in efficient building practices, energy retrofits and renewable energy systems for homes and businesses
6. Require that private development projects incorporate Green Building Requirements for Private Development and encourage development projects to exceed Title 24 standards
7. Support incentives and rebates for electric and solar thermal installations for residents and businesses

