

LA: THE DREAM STARTS HERE

BUILDING LOS ANGELES INTO A GLOBAL CAPITAL OF CLEAN TECHNOLOGY



Mayor's Office of Economic Development
Mayor's Office of Energy & Environment
Office of Mayor Antonio R. Villaraigosa



IMAGINE LOS ANGELES IN 2020...

**The
Economist**

July 1, 2020

***“LA has emerged as one of the
new capitals of the green
economy...”***

The New York Times

May 1, 2020

***“LA rebuilt its middle class by
embracing the opportunities
presented by the clean
technology revolution...”***

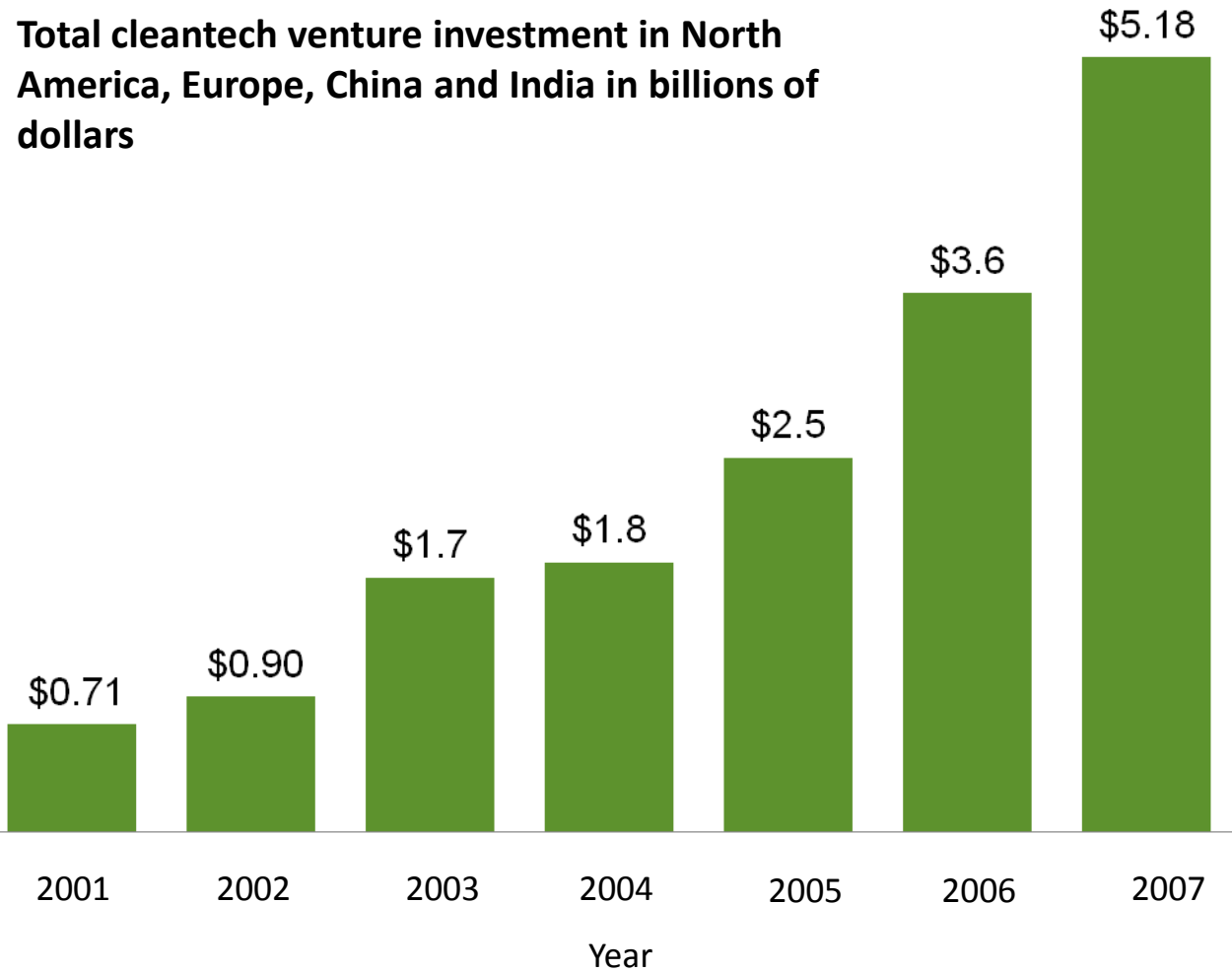
Los Angeles Times

September 1, 2020

***“LA-area schools power the
growing green economy...”***

THE GREEN ECONOMY IS ALREADY GROWING FAST

Total cleantech venture investment in North America, Europe, China and India in billions of dollars



Because of investment in cleantech, by 2020 California will reap a \$74 billion increase in GDP and will generate 89,000 new jobs.
--UC Berkeley

\$45 trillion investment in clean tech by 2050.
--Intl. Energy Agency

Sources: cleantech.com, International Energy Agency; Economic Growth and Greenhouse Gas Emissions in CA, UC Berkeley, 2006; CA Economic Strategy panel, 2008

THE COLOR OF THE NEW “NEW DEAL” IS GREEN



*“My energy plan will invest **\$150 billion** over ten years to establish a green energy sector that will create up to **5 million new jobs** over the next two decades.”*

–President Barack Obama

1. Invest in Green energy economy

- Increase investment in basic research & human capital
- Invest in key technology development
- Invest in key technology deployment
- Set standards to allow the market to invest & innovate

2. Reduce emissions through energy efficiency

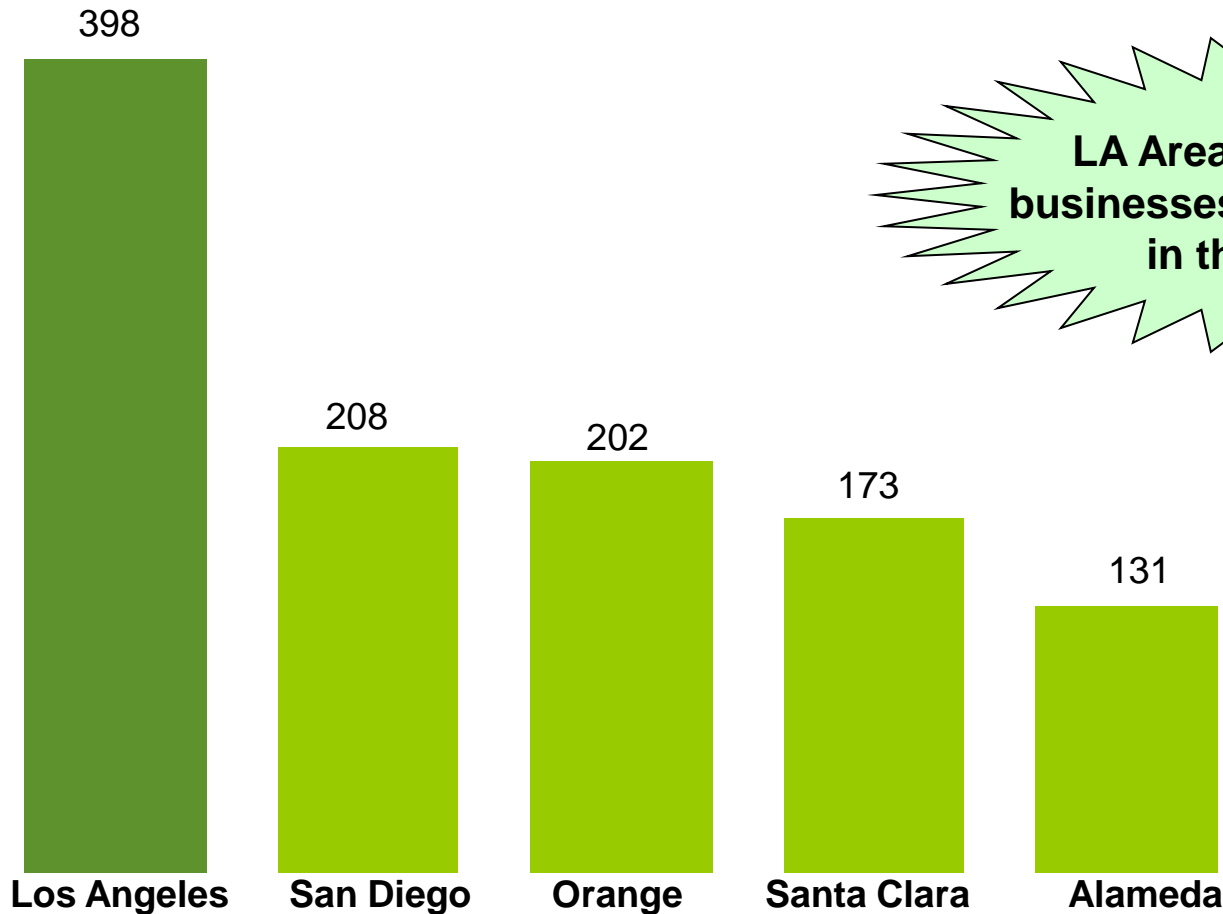
- Make the federal government the leader in saving electricity
- Dramatically improve efficiency of buildings
- Phase out inefficient light bulbs
- Invest in digital smart grid

3. Energy Independence

- Increase fuel economy standards
- Invest in developing advanced vehicles
- Build biofuel distribution infrastructure
- Build more livable and sustainable communities

LOS ANGELES LEADS THE STATE IN GROWING GREEN BUSINESSES

Total number of cleantech businesses, by county



LA Area has 817 green businesses compared to 590 in the Bay Area

Sources: Environmental Defense Fund, 2009 <http://www.edf.org/page.cfm?tagID=40388>

Note: LA Area includes Los Angeles, Orange, Riverside, San Bernadino and Ventura counties. Bay Area includes Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Solano and Sonoma counties

FIVE FACTORS THAT CONTRIBUTE TO CLUSTER GROWTH

R&D:

Los Angeles' top universities, research labs, innovative firms and entrepreneurial spirit make LA a leader in research, commercialization, and development of cleantech

- *3 of the 15 top engineering schools in the nation*
- *More cleantech patents than the Bay Area*

TALENT:

With a strong cluster of top research and design institutions, high quality of life and diverse population, LA has top notch talent pools and intellectual capital

- *More engineering grads than any other region*
- *High quality of life is an international magnet for talent*

MARKET:

LA has a large and globally influential market, strong investment community, and is home to strong clusters in entertainment, technology, aerospace, and logistics

- *LA region 2nd largest VC investment in US (after Silicon Valley)*
- *City of LA alone has ~\$2 billion annual spend for cleantech related programs (e.g., sustainable building, renewable energy, transportation)*

POLICY:

The City and State's leadership in finding solutions for the region's environmental needs can drive local markets

- *DWP Renewable goals, DWP Solar Initiative, Clean Air Action Plan, Green LA, AB 32 drive public & private investment in cleantech*

LEADERSHIP:

Los Angeles is well situated to position itself as a global cleantech leader

- *High profile, signature initiatives (e.g., Cleantech Manufacturing Center, Clean Innovations Campus)*
- *High profile Mayor with national platform, engaged innovative City Council*
- *City's ability to use the power of the DWP, Port & Airport*

LA'S TOOLKIT FOR PROMOTING CLEANTECH

- 1 Traditional Incentives (e.g., tax credits, loans)
- 2 Progressive Policies (e.g., green building ordinance)
- 3 Investment (e.g., Technology Advancement Program)
- 4 Platform/Laboratory (e.g., demonstration projects)
- 5 Purchasing & Procurement
- 6 Land (e.g. Cleantech Manufacturing Center)
- 7 Good publicity



THE LOS ANGELES CLEANTECH CORRIDOR



Cornfields-Arroyo Seco Plan

- Innovative specific plan
- Community will be to LEED Neighborhood Development (ND)
- Will support cleantech and R&D uses

City of Los Angeles
Department of City Planning



DWP Clean Technology Research Center

- 6 acre site
- DWP will build “green” building with lab and office space
- Focus on research and development of cutting-edge alternative energy technologies

Los Angeles
Department of Water & Power

Live-Work Arts District

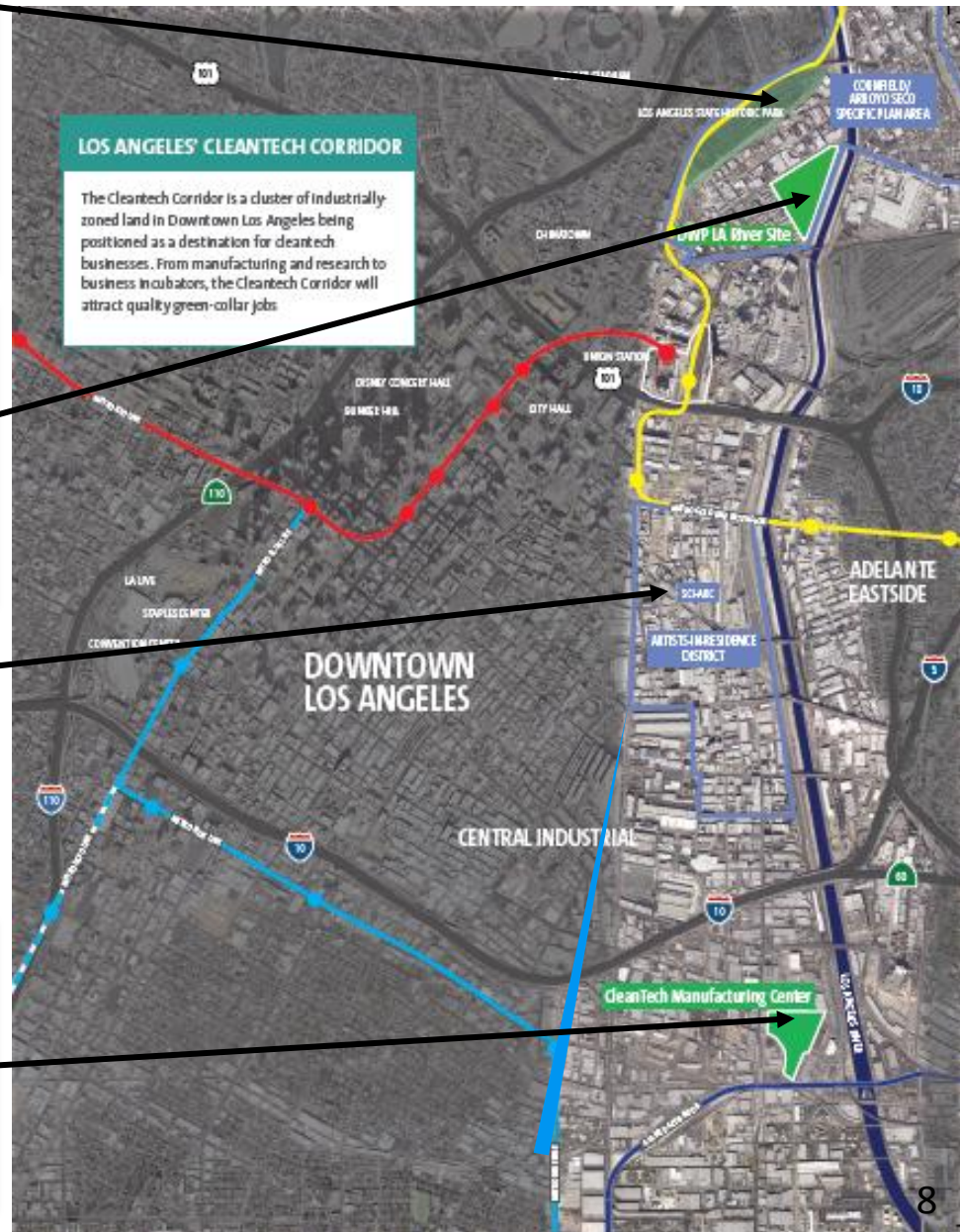
- Home to SCI-Arc and people in the creative industries
- Converted lofts could provide housing stock for cleantech sector



Clean Tech Manufacturing Center

- 20.6 acre site
- CRA/LA-owned
- Develop into a cleantech site with anchor tenant, ancillary uses, and incubator or training facility

CRA/LA
BUILDING COMMUNITIES



LOS ANGELES' CLEANTECH CORRIDOR

The CleanTech Corridor is a cluster of industrially zoned land in Downtown Los Angeles being positioned as a destination for cleantech businesses. From manufacturing and research to business incubators, the CleanTech Corridor will attract quality green-collar jobs.

CLEANTECH LOS ANGELES



Innovate. Accelerate. Impact.

Clean Tech Los Angeles is dedicated to establish Los Angeles as the global leader in research, commercialization, and deployment of clean technologies.

Why L.A.	Rethink L.A.	Understand L.A.	News & Events	Projects	Resources	About Us
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News & Events

- City of Los Angeles to certify green businesses**
LA Times
- L.A. Trots Out Ambitious Solar Plan**
GreenTech Media
- Fostering Innovation and Investment Opportunities in Clean Technologies**
Palm Springs, CA
- Hybrid tugboat may give local ports a green push**
Los Angeles Times
- UCLA researchers create polymer solar cells with higher efficiency levels**
UCLA Press
- Go Green Expo**
LA Convention Center

Latest Project

SolarLA: The Largest Solar Power Plan in America
Mayor Antonio Villaraigosa, City Council President Eric Garcetti, Councilmember Jan Perry and Los Angeles Department of Water and Power today unveiled Solar LA, > [more](#)

SUN, SEA, TECH AND TALENT
ONE OF THE WORLD'S STRONGEST ACADEMIC AND RESEARCH CENTERS

- \$1.6 billion in federal research dollars** and over 200 patents issued each year.
- More engineering graduates** than any area of the United States.
- More Nobel prizes** than any other country but France, Germany, United Kingdom, and the United States.

Sign-Up
Please enter your e-mail address to receive

1. Mission

To establish the Los Angeles region as a global leader in research, commercialization, production, and deployment of clean technologies; and to promote the development of capital, talent, workforce to drive these new industries.

2. Focus Areas

- Advocacy
- Research
- Outreach
- Economic Development

Organization Started as a collaboration between:



LEVERAGING LA'S ENVIRONMENTAL INITIATIVES TO GROW CLEANTECH



20% renewables by 2010, 40% by 2020

62% recycling rate—the highest of any major city



Reduced per capita water consumption by 13% since 1990

Coal-free LA by 2020



\$1.6 billion Clean Truck Program will reduce diesel emissions at the Port by 80%

TECHNOLOGY ADVANCEMENT: CLEAN AIR AND ELECTRIC TRUCKS

INVEST

- 1st project from the Port's Technology Assessment Program
- 1st All-Electric Drayage Truck prototype funded by POLA and SCAQMD and created by BALQON

TEST

- Tested over a seven month period

PURCHASE

- In April 2008, a three year, \$5.4M agreement with Balqon was approved to fund and implement the Electric Truck Program

LOCATE

- New manufacturing business sited near port, creating 50 manufacturing jobs

Batteries
Electric Motor



OUR EFFORTS ARE STARTING TO ATTRACT ATTENTION



Mayor sets agenda for the nation

PROFILE
ANTONIO VILLARIGOSA
Green is the colour of the mayor's big push, writes Matthew Garrahan

Los Angeles has always been a centre for innovation – witness, among other things, the birth of the global positioning system, the skateboard and the Mars rover.

Antonio Villarigosa, Los Angeles mayor, says he wants to add the development of "clean" technology to the list of the city's creative accomplishments.

He has set his sights on Los Angeles becoming the greenest city in America and wants to use his size and purchasing clout to reduce its greenhouse gas emissions and attract investment from clean-technology companies.

The mayor has pursued an environmental agenda since being elected three years ago and committed Los Angeles to the Kyoto

protocol within days of taking office. "We had the dirtiest air in America," he told the FT. "It was incumbent on us to take a lead in greening and cleaning the nation."

This year, the city will meet its Kyoto targets and will generate 10 per cent of its energy from renewable sources, having started at 2 per cent when Mr Villarigosa was elected.

It is on track to generate 20 per cent of its energy from renewable sources by 2010 and will reach 35 per cent by 2020, outstripping Kyoto targets as well as those set for California by Arnold Schwarzenegger, the state's governor.

The targets have been met quickly because Mr Villarigosa controls a unique set of municipal assets, such as the Los Angeles port and the Department of Water and Power, which is the largest public utility in the US.

The DWP has significant electricity needs, so Mr Villarigosa directed it to buy 20 per cent of its energy from renewable sources, such as wind, solar

and geo-thermal power, at a cost of about \$1bn a year over the next five years.

He is also using the city's ownership of the port to cut emission levels. The Los Angeles port and its neighbour in nearby Long Beach are the worst polluters in southern California, thanks to the nearly 17,000 diesel trucks that regularly ship goods in and out of the facilities.

"We had the dirtiest air in America. It was incumbent on us to take a lead in greening and cleaning"

The California Air Resources Board says the trucks produce emissions that are more harmful than the area's six cars.

In conjunction with the two ports, Mr Villarigosa recently launched a "clean trucks" scheme that burned nearly 2,000 diesel vehicles built before 1989 from entering the ports. Haulage

operators were offered incentives to switch to cleaner trucks and almost 600 companies signed up.

By 2012, 16,000 diesel trucks will have been taken off the road as a result of the scheme. "It's the most far-reaching clean-air action plan in the nation," says Mr Villarigosa.

Shipping lines using the port will be offered incentives to use low-sulphur fuels, while Los Angeles is also replacing diesel locomotives at the docks with electric ones.

Although the ports scheme is at an early stage, it has attracted global attention: the city has been approached by international port operators wanting to learn how to improve environmental conditions at their own facilities.

"We have been hamstrung by community opposition to expansion," says Geraldine Knatz, executive director of the Los Angeles Port. "But going green allows us to move forward."

Mr Villarigosa stresses that Los Angeles has taken such wide-ranging action on

emissions and renewable energy because of an absence of White House leadership. "We believe cities have an important responsibility, particularly when the federal government has failed in its responsibilities [to the environment]," he says.

But his plans extend beyond meeting Kyoto targets. He says renewable energy is a big opportunity that could have lasting economic benefits for Los Angeles.

As part of the clean trucks programme, the city gave a \$500,000 grant to Balqon, a small company that had designed a prototype electric truck. The Los Angeles port helped Balqon test the truck and then bought the first 25 vehicles for about \$6m.

Every time Balqon sells a truck to another port Los Angeles will receive a royalty fee, which will be reinvested in developing new, clean technology.

The mayor has also included the Los Angeles City Employees Retirement System (Lacers) pension fund in his green



Mr Clear: Antonio Villarigosa

programme: the fund is investing \$45m in clean-technology companies.

However, to become the leading global player in the development of clean technology, it needs to attract international companies.

A large parcel of derelict industrial land around the Los Angeles River has been set aside to create what city officials are dubbing a "clean-technology corridor".

Discussions have started with international companies about relocating to the corridor and a range of incentives are available for businesses opting to move to the city.

The site will include a research facility that will

It is an ambitious plan but there is much to be gained, says Mr Villarigosa. "We're taking our environmental problems and turning them into economic opportunities. Los Angeles is uniquely positioned to emerge as a global capital of the green economy."

draw on the talents of local high-education institutions, such as California Institute of Technology and the University of California, Los Angeles.

About 20 acres has been set aside for a manufacturing camp which the mayor hopes will attract new businesses.

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