

The Future of Cleantech in an Era of Uncertainty



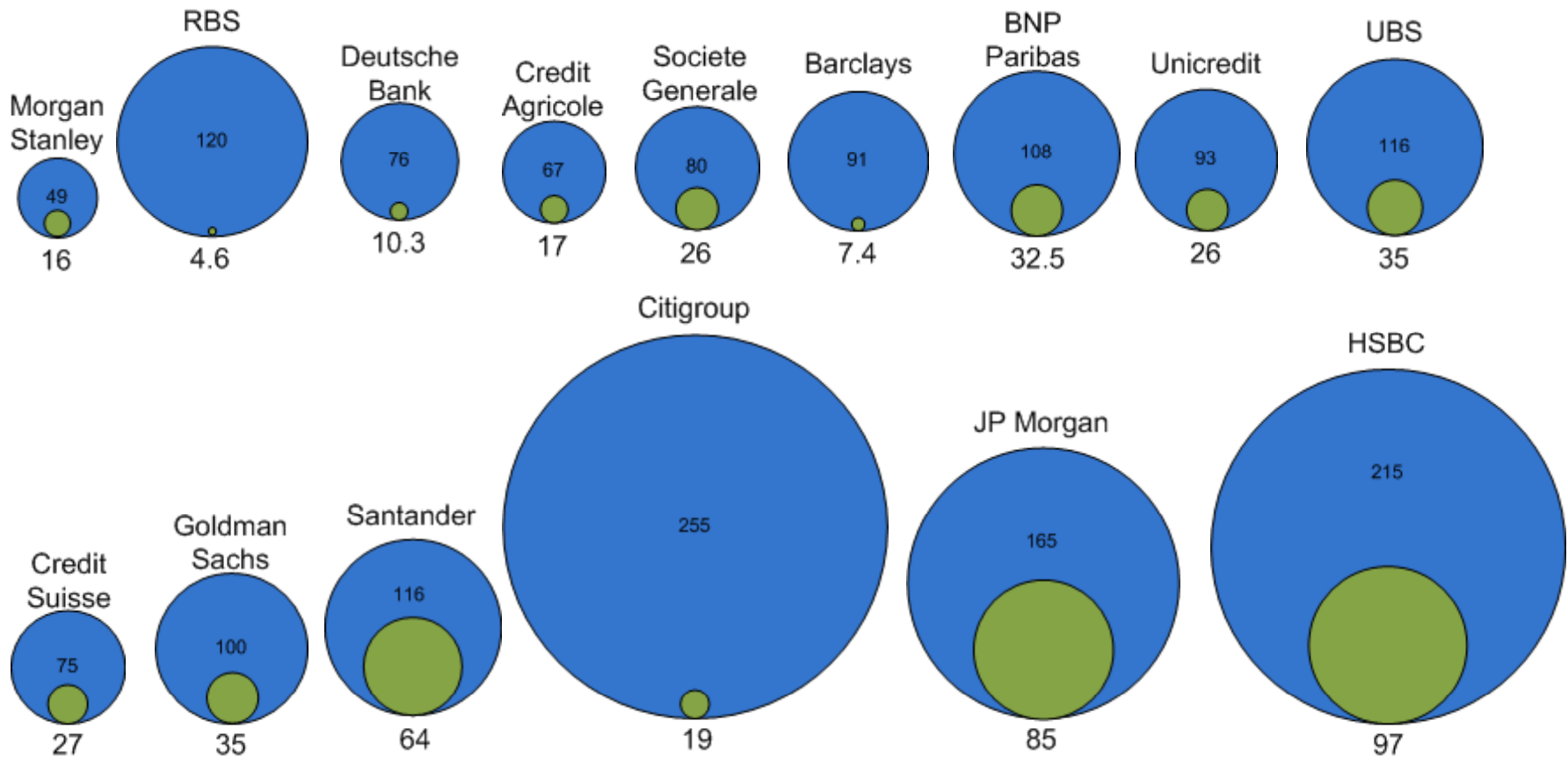
Tom Soto, Managing Partner of Craton Equity Partners and
Co-Lead of the White House Council on Environmental Quality Transition Team

Obama on US oil addiction: Shock and trance

Banks by market cap

● Market Value as of January 20th 2009, \$Bn

● Market Value as of Q2 2007, \$Bn



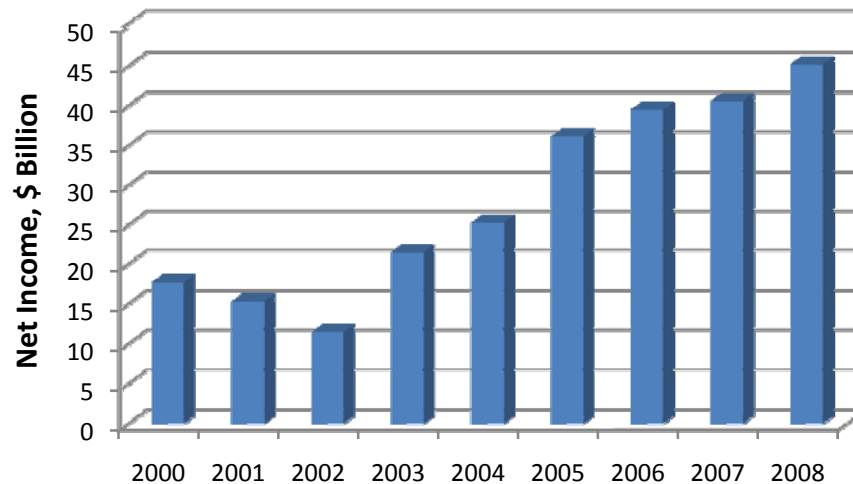
Fuel to the fire

- **“As conservatives, we believe, as Ronald Reagan did, that government should ‘work with us, not over us; to stand by our side, not ride on our back’... That wisdom is the key to creating a healthy, growing economy -- and by most any measure, that is what we have today.”** (*The theory of deregulation*)

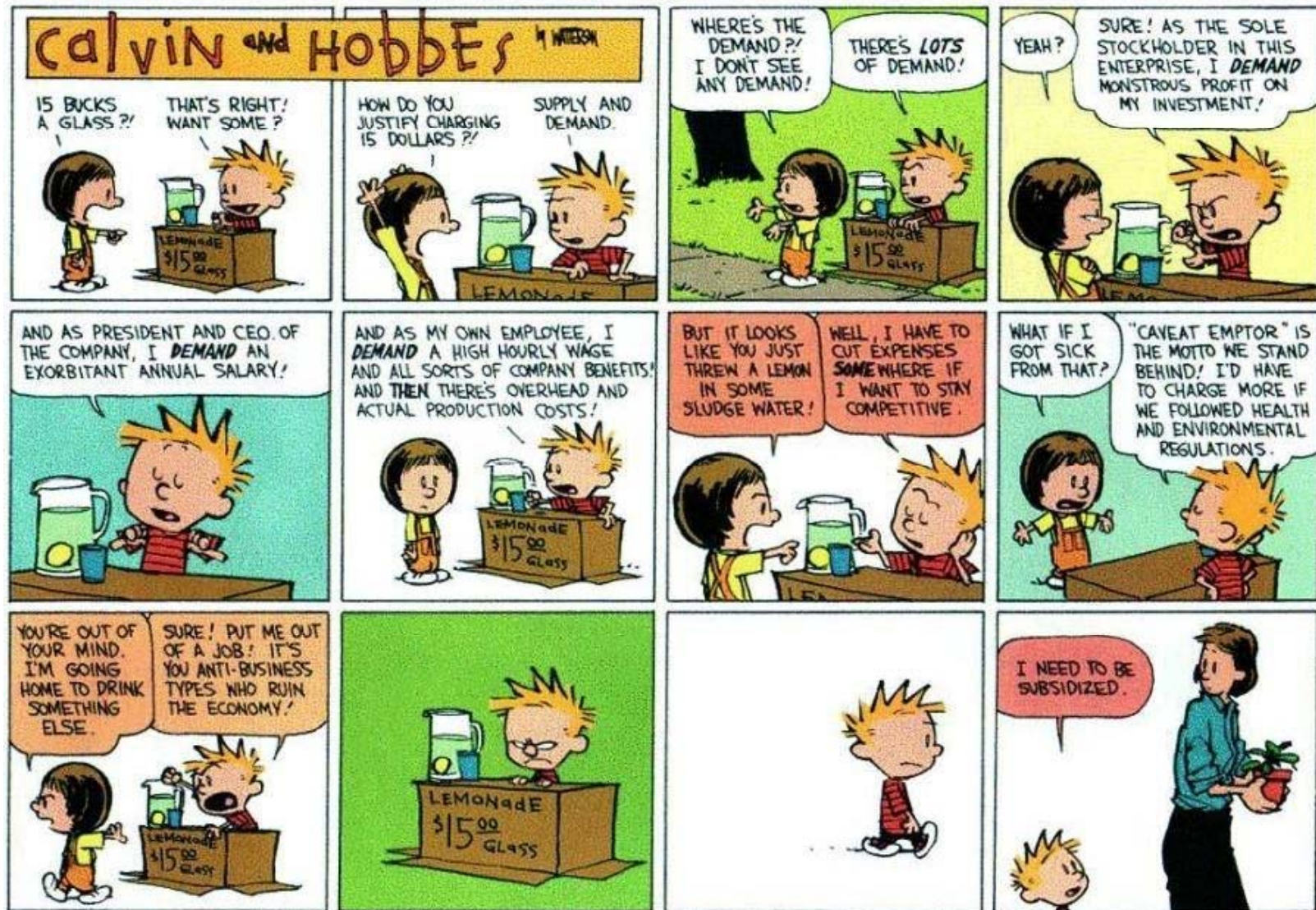
– Dick Cheney, March 5, 2007

- Meanwhile, Big Oil was reaping record profits:

ExxonMobil



How the US economy has been managed for the past 8 years



Re-thinking shareholder value

Jack Welch, who is regarded as father of the “shareholder value” movement, **has said the obsession with short-term profits and share price gains that has dominated the corporate world for over 20 years was "a dumb idea."**

"On the face of it, shareholder value is the dumbest idea in the world" ... **"Shareholder value is a result, not a strategy [...]** your main constituencies are your employees, your customers and your products."

– The Financial Times, March 12, 2009

Shock and awe

“All told, the **bill for the Iraq war is likely to top \$3 trillion.**

And that's a conservative estimate.”

– The Washington Post, March 9, 2008



Bobby Kennedy

“Our gross national product [...] does not include the beauty of our poetry or the strength of our marriages; the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage; neither our wisdom nor our learning; neither our compassion nor our devotion to our country; it measures everything, in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans.”

– Bobby Kennedy, March 18, 1968, University of Kansas

Melbourne and Los Angeles



37°, 47' S – February 2009 – Melbourne



Total reported insurance cost of \$1.5 billion

34° 3' N – November 2008 – Los Angeles



Estimated damage totaling \$255 million



Climate change in California



“Through global warming, we have now a fire season all year round. We used to have fire seasons only in the fall. But now the fire seasons start in February...”

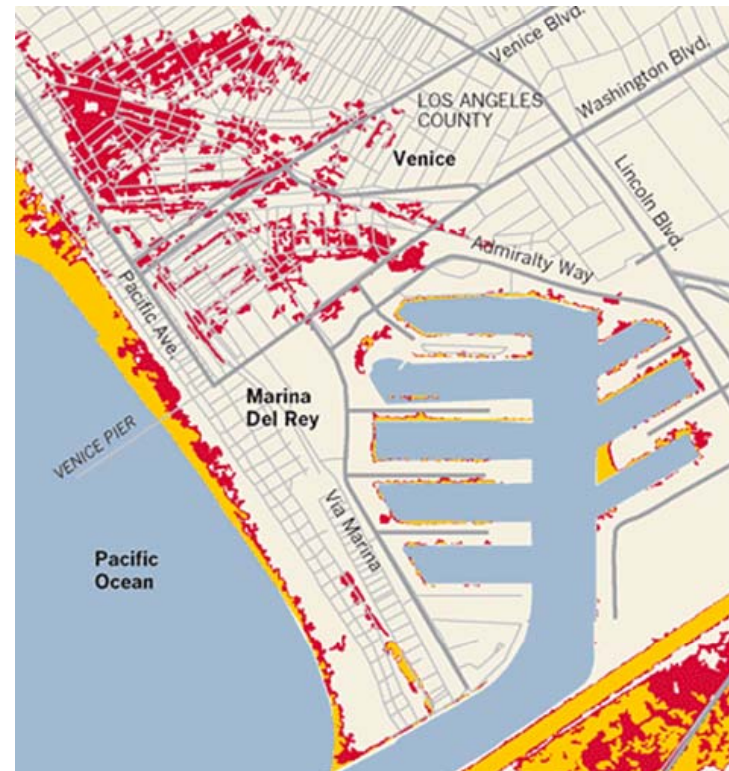
– Governor Schwarzenegger, Nov. 16, 2008

Damage from 2007-2008 California fires: more than \$2.4 billion

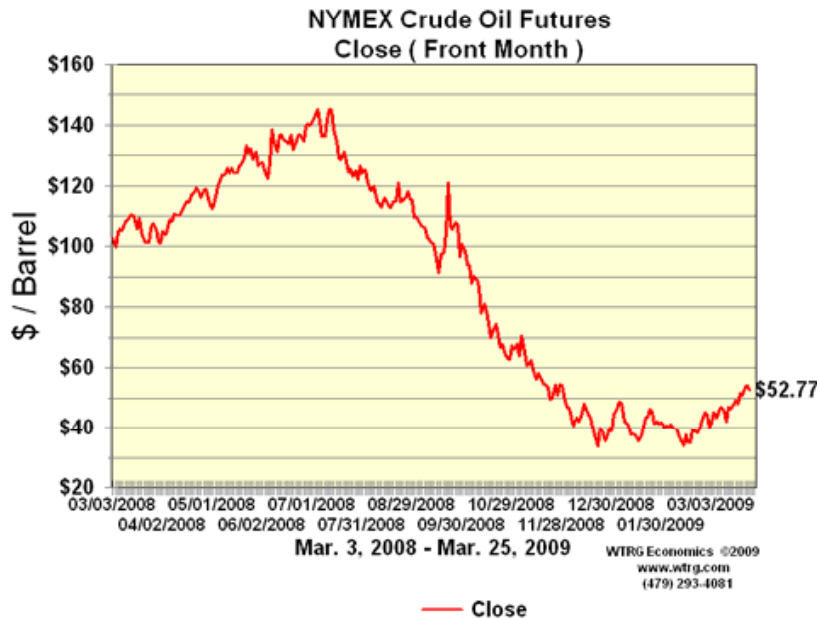
Climate change in California, cont.

- Sea levels along California have risen an average of about 8 inches in the past century
- Currently, 1,900 miles of roads and highways are at risk of flooding, which would grow to 3,500 miles under the sea level rise projections
- According to CA's interagency Climate Action Team, **armoring the coast** with 1,100 miles of new or modified sea walls and levees, **would cost at least \$14 billion to construct, and another \$1.4 billion a year to maintain**

– The Los Angeles Times, March 12, 2009



The Obama Administration opens a new chapter

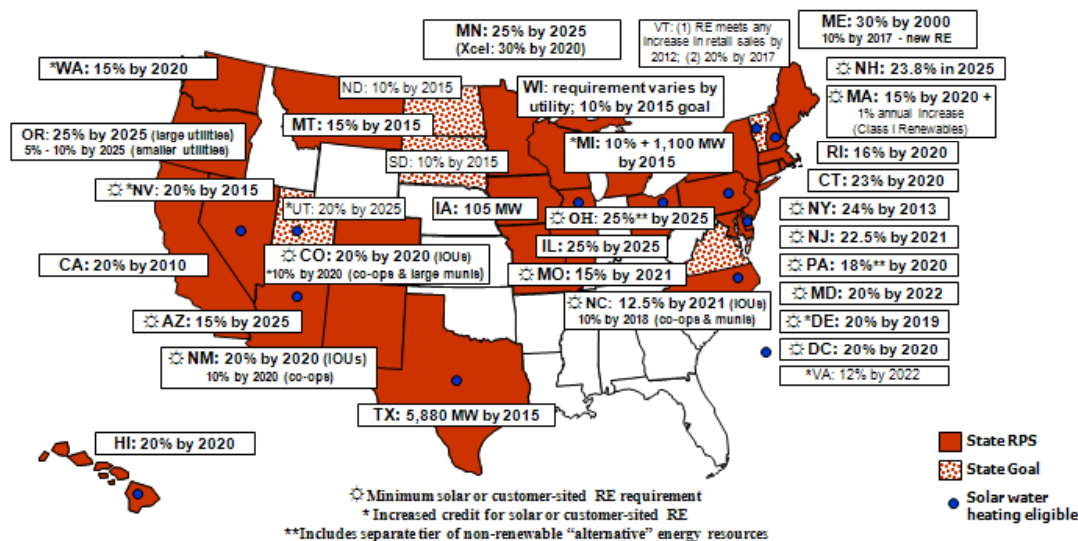


“The drop in oil prices, I do think, makes the conversation about energy more difficult, not less necessary.”

– President-Elect Obama,
Dec. 5, 2008

Source: WTRG Economics, www.realclearpolitics.com, www.time.com

Local government has taken the lead on climate policy



- **39 US states** and more than **300 cities** have passed initiatives supporting the Kyoto Protocol
- As of February 2009, **181 countries** have signed and ratified the Kyoto Protocol
- Most states have established Renewable Portfolio Standards
- CA passed model climate change legislation through AB 32
- Federal energy and environment policies will need to match or exceed existing state initiatives

Sustainable investing and the Obama Administration

Conservation Infrastructure

Focus of government spending includes **smart grid hardware and software**, modernized **electricity transmission** infrastructure, **mass transit**, **water systems**, **school repair**, and universal **broadband Internet access**.

Energy Generation

Tax breaks and fiscal incentives, including loan guarantees, for a variety of clean energy projects including **solar** arrays, **wind** farms, **geothermal**, **waste-to-energy** and **clean fossil energy** technology.

Transportation

Tax credits and direct spending will be used to accelerate the commercialization of **advanced biofuels**, **electric vehicles** and **battery technology**.

Source: Wall Street Journal, 11/19/08, 12/13/08



Brazil as a model for energy independence



1975

- 90% of fuel consumption depended on foreign oil
- National ethanol program launched
 - Subsidies to cane growers, ethanol pumps in every town of 1,500 or more and mandatory blending of ethanol in gasoline (now at 25%)

1980's

- Ethanol became the fuel of choice for 90% of Brazilian vehicles leading to ethanol shortages and policies to boost domestic oil production
- Sugar cane subsidies were eliminated in light of falling oil prices, forcing the industry to become more efficient
 - Research at the Center for Sugarcane Technology in Sao Paulo developed technology to reduce the production costs of ethanol to be competitive with oil based fuels

Today

- Ethanol comprises 50% of light vehicle fuel and about 20% of total vehicle fuel in Brazil
- Prominent use of ethanol as transportation fuel allowed Brazil to achieve equilibrium in 2006 by exporting as much oil as it imported
- Nearly 90% of electricity is generated from renewable sources (mostly hydro) with about 8% from conventional thermal and 2% from nuclear

Source: Washington Post, 8/20/06; Washington Times, 5/7/08; Energy Information Administration

The right team moving forward



Hilda L. Solis, Secretary of Labor

- Member of the House of Representatives since 2000
- Job creation through green investing



Ken Salazar, Secretary of the Interior

- US Senator since 2004
- Sponsored geothermal heat pump credit in the 2009 ESSA



Carol M. Browner, White House Office on Climate Change

- EPA Administrator from 1992 to 2000
- Cleantech advocate



Nancy Sutley, Chair of the Council on Environmental Quality

- Los Angeles Deputy Mayor for Energy and Environment since 2005
- Funding and cleantech

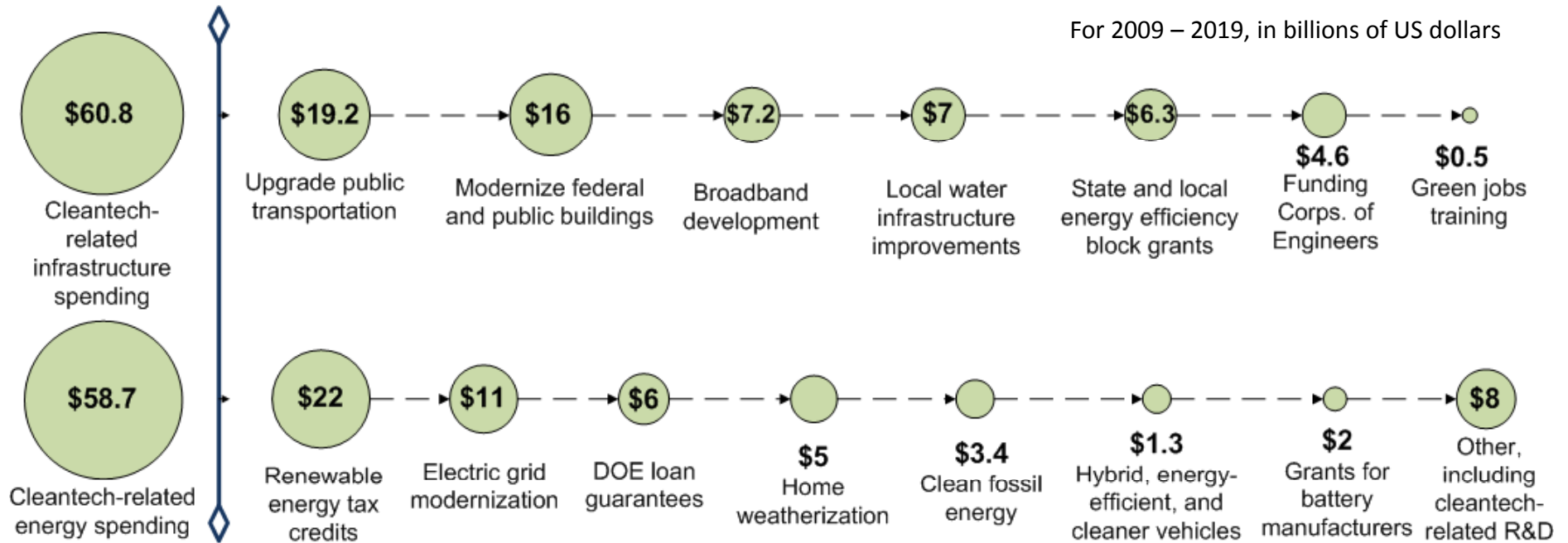


Lisa Jackson, Administrator of the Environmental Protection Agency

- Commissioner of the New Jersey Department of Environmental Protection
- Former EPA administrator for 16 years

Source: NY Times

The \$119.5 billion cleantech stimulus package



- Non-cleantech related investments and tax-cuts: \$667.5 billion

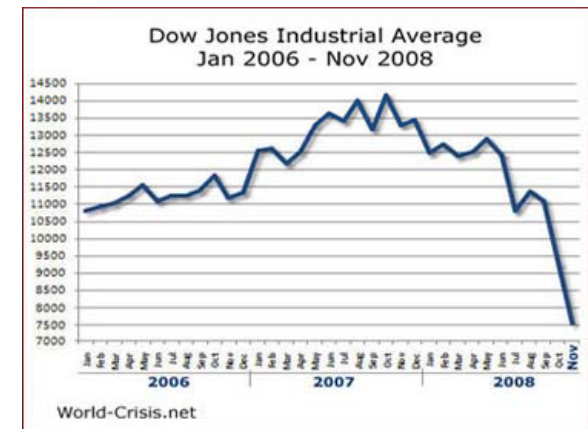
- Major spending areas:

- State and local fiscal relief \$144 billion
- “Protecting the vulnerable” \$81 billion
- Other infrastructure and science \$64.5 billion
- Healthcare \$59 billion
- Education and training \$53 billion

Source: Committee on Appropriations and Recovery.com, March 12, 2009

Sustainable investing in an era of uncertainty

- US government passed the Emergency Economic Stabilization Act (EESA) on October 3, 2008, authorizing the US Treasury to buy up to \$700 billion worth of mortgage-backed securities
- \$700 billion is the same amount that the US spends each year to import oil from around the world
- Uncertainty about the future direction of energy prices and crises facing state and federal budgets compound global financial crisis
- However, the EESA sent a clear message to the cleantech sector with the inclusion of key tax credits for renewable energy
 - An 8-year extension of the investment and production tax credits for solar power and a 1-year extension for wind power
 - New 2-year investment and production tax credits for geothermal energy, bringing geothermal heat pumps to parity with other sources of clean energy generation and efficiency
 - A 2-year extension of the production tax credit for closed and open-loop biomass production, landfill gas, hydropower, and waste-to-energy facilities
 - \$2.6 billion directed toward clean fuels and vehicles, including plug-in hybrid technology



Sustainable investing in an era of uncertainty, cont.

- The American Recovery and Reinvestment Act of 2009 (the Stimulus Bill) further extends placed-in-service deadlines for renewable energy projects to receive tax credits
 - For wind: through 2012
 - For biomass, geothermal, municipal solid waste and qualified hydropower: through 2013
- The Recovery Act also provides that project developers can elect an investment tax credit (ITC) in lieu of the production tax credit (PTC), for 30% or 10% of the upfront cost of the energy property– depending on the technology/resource
- In addition, the Act provides that the Treasury will pay a grant in lieu of either the PTC or ITC
 - 30% for wind, biomass, geothermal, municipal solid waste, qualified hydropower, marine and hydrokinetic renewable energy property
 - 10% for qualified microturbine, combined heat and power, and geothermal heat pump property

Clean technology a key pillar of proposed US budget

Clean technology a key pillar of proposed US budget, cont.

- \$150 billion historic investment over 10 years in clean energy and energy efficiency
 - Building on Recovery Act foundation and setting the stage for comprehensive energy legislation
 - Electric grid modernization
 - Clean energy generation and energy efficiency
 - Economy wide cap-and-trade
- Proposed budget includes:
 - 10 year commitment to make the research and experimentation tax credit permanent
 - This tax credit returns \$2 to the economy for every dollar spent
 - Provision to reduce to zero the capital gains tax for investments in small or startup businesses
 - Small businesses generate 13X more patents per employee than big companies

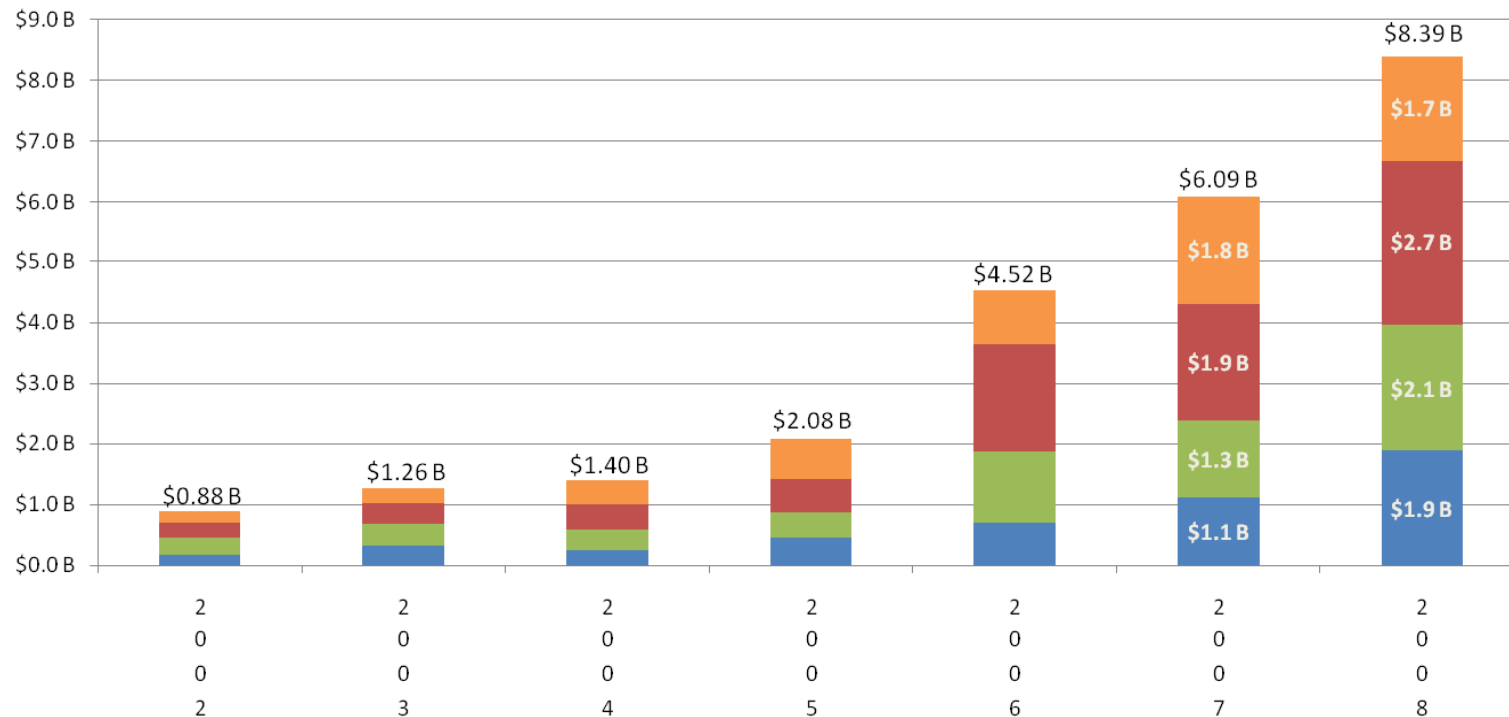
Enduring demand for sustainable investments

Driver	Description
Need for Economic Recovery	<ul style="list-style-type: none">• Focus is shifting to fundamental sources of GDP creation such as technological innovation, energy security and human capital development• Cleantech is at the intersection of all three sources
Policy	<ul style="list-style-type: none">• New federal and state tax credits, loans, grants and other incentives• Renewable portfolio standards and energy certificates in most states• Obama has allocated \$119.5 billion of the stimulus package to cleantech• Progressive renewable energy and climate change legislation expected in 2009• Direct regulation of air emissions using the Clean Air Act expected from the EPA
Public Awareness of Climate Change	<ul style="list-style-type: none">• Post -“Inconvenient Truth” era• Consensus among all major scientific and government organizations on the reality of climate change and impending effects
Investment Climate	<ul style="list-style-type: none">• Cleantech VC and private equity investing poised to ride out the storm• More than \$6.6 billion of private capital invested in the cleantech sector globally in 2008 (through September), surpassing the 2007 total of \$6.0 billion

Source: Energy Information Administration; Cleantech Group; Wall Street Journal, Dec. 13, 2008

Global VC cleantech investing by quarter

Quarterly Cleantech Investment
Tracked by Cleantech Group



2008 cleantech investments are up 38% from 2007;
6-year compound annual growth rate of 60%

Source: Cleantech Group

After 30 years, sustainable investing has come of age

- In California alone, energy efficiency policies have created 1.5 million jobs and \$35 billion for downstream industries since 1977
 - During this time, Californians have reduced per capita energy consumption to a level that is 40% below the national average, making them the leanest energy users in the country
- California's AB 32 is expected to create 100,000 new jobs
- Public agencies authorized by voter-approved bonds from school districts, state correctional facilities and water districts are defining the sector
- Companies like Wal-Mart, Google, GE and IKEA are helping drive growth in cleantech
 - Mainstream employees are becoming increasingly fluent in skills required for a greener economy
- The Obama campaign estimated that 5 million jobs could be created across the US by a \$150 billion investment in cleantech over 10 years

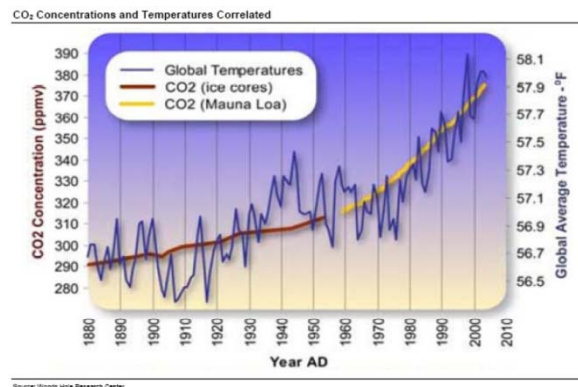


“In the face of rising unemployment, renewable energy has become a crucial source of good jobs, particularly for laid-off Rust Belt workers.”

– New York Times, Nov. 2, 2008

Climate change is the #1 financial liability facing mankind

- According to the UN, an increase of just 2°C will sharply increase the risk of a climate tipping-point that could lead to “intolerable impacts on human wellbeing.”
- California policy makers understand the true ROI for sustainable investments
 - “California regulators cracked down on diesel air pollution Friday, adopting the nation's toughest rules on heavy-duty trucks...The state Air Resources Board voted unanimously for the measure that requires truckers to retrofit or replace older rigs, starting in 2011. The board declared that the health benefits far outweighed the financial pain.”
 - Mary Nichols, CARB Chairman said, “This regulation will save more than 9,000 lives and reduce the toxic emissions that cause cancer and birth defects.”



Source: UN report on climate change, Feb. 2007; Los Angeles Times, Dec. 13, 2008

The silver lining

Los Angeles Times

'Green' industrial park proposed for downtown Los Angeles

By Marla Dickerson
Los Angeles Times Staff Writer

September 24, 2008

“The silver lining in the dark cloud of economics we’re living through right now really is clean tech,” Soto said. “You’d be hard-pressed to find another sector with the velocity of growth and job creation that’s occurring right now.”



Photo: Craton Managing Partner, Tom Soto speaking with the Mayor of Los Angeles, Antonio Villaraigosa, LA City Councilman Jose Hutzar, and CRA Chief Executive Cecilia Estolano.

Future demand for sustainable investing

“The last frontier of the environmental movement has become the private sector, with waves of investors occupying this space. The single greatest determining factor could be a reduction in carbon, cleaner water or a cap and trade market... but none of these will have the effect that superior returns on investment will have. A singularly focused investment strategy with superior returns, will be, beyond anything else, why cleantech will remain near the center of our country’s pending economic recovery.”

– Tom Soto

Thank You.