

# Climate Change and the Cleantech Response

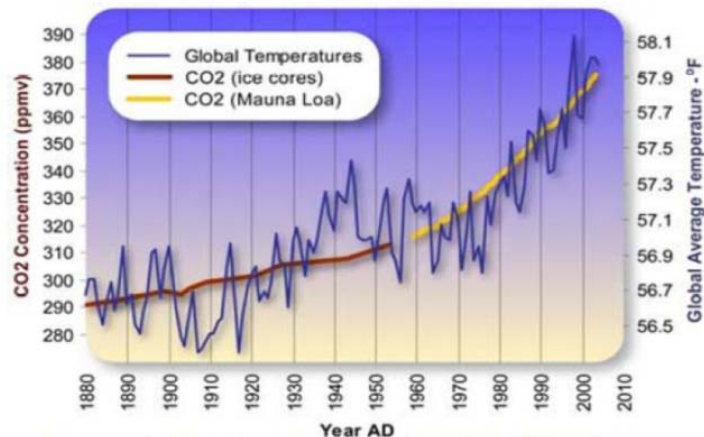


Tom Soto, Managing Partner of Craton Equity Partners and  
Co-Lead of the White House Council on Environmental Quality Transition Team

# 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 well-being”
- 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.”

CO<sub>2</sub> Concentrations and Temperatures Correlated



Source: Woods Hole Research Center



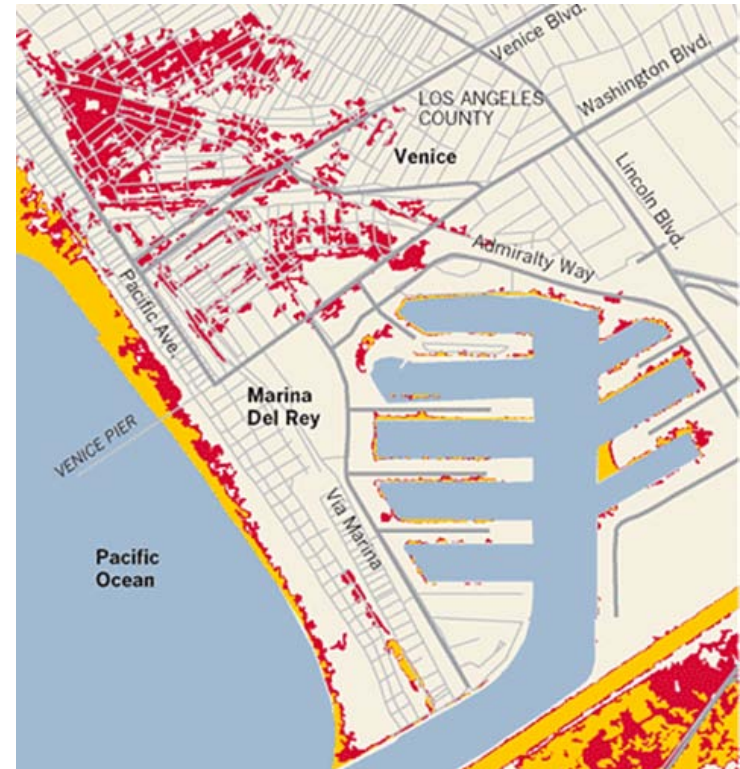
Courtesy Basell Biff and Rohrad Steffen

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

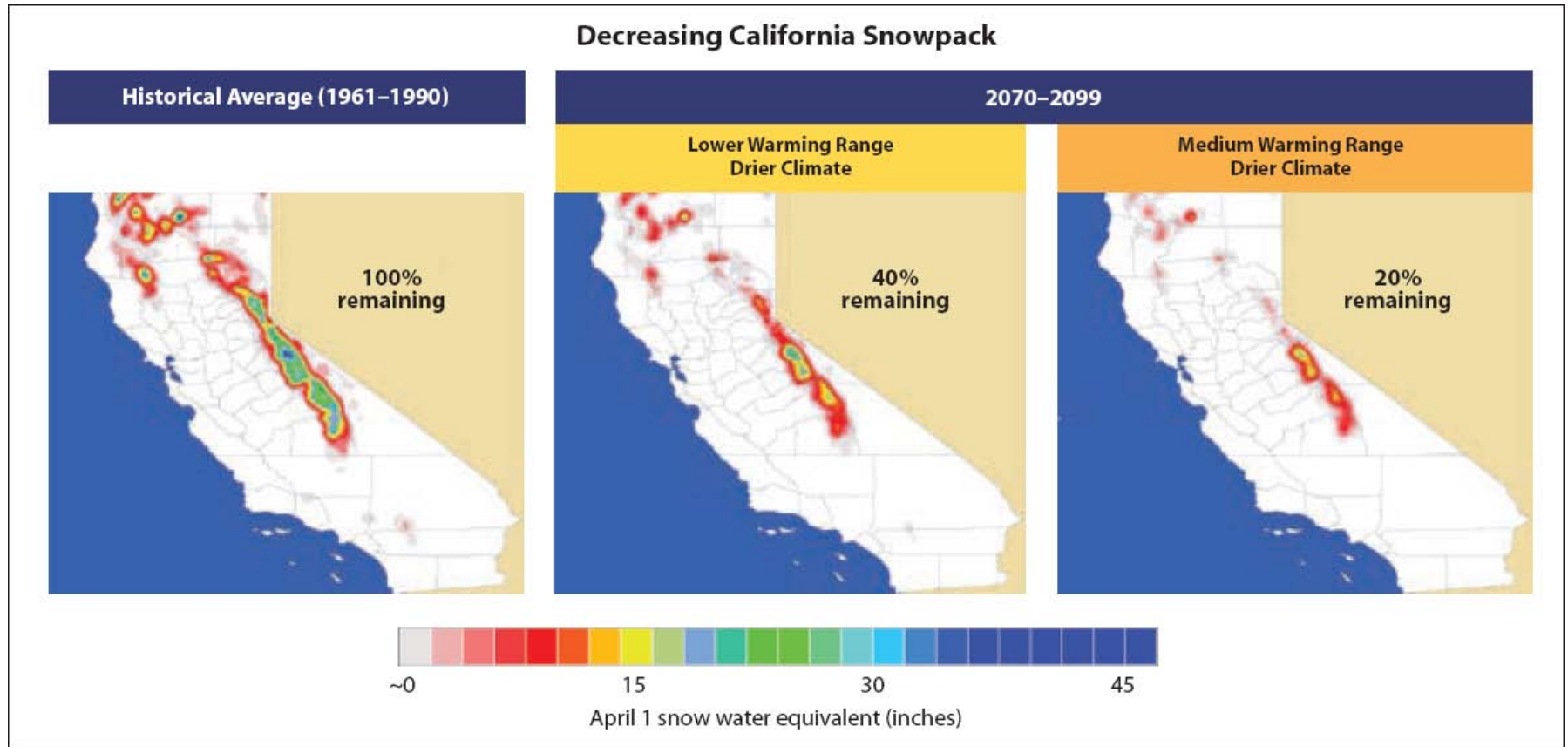
# Climate change in California

- 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



# Vital snowpack is projected to decline due to climate change



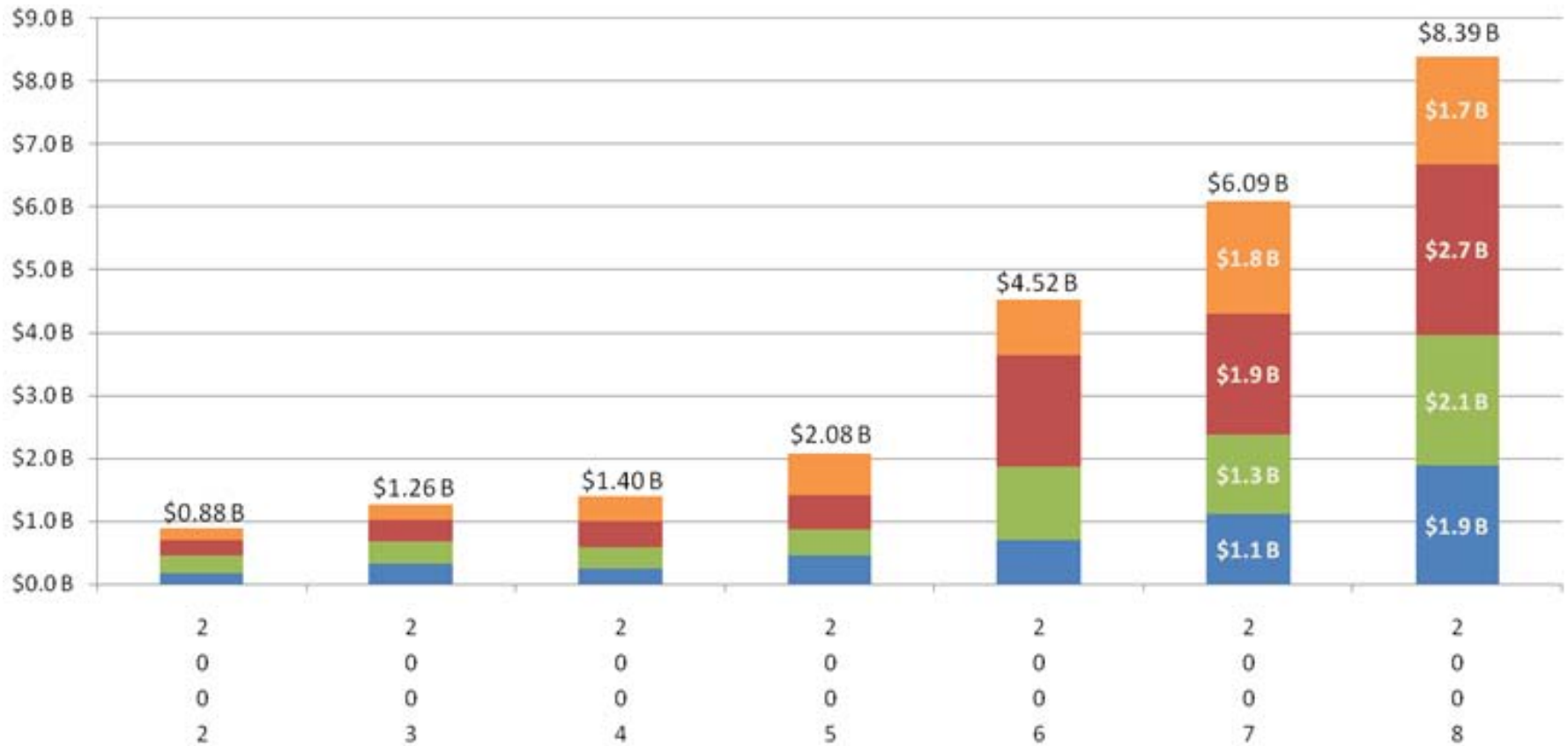
- Spring snowpack in the Sierra Nevada range has decreased by as much as 70 to 90 percent due to climate change and heat-trapping emissions
- Storage in California's major reservoirs is low. Lake Oroville, the principal storage reservoir for the State Water Project (SWP), is only at 56 percent of capacity.

# Cleantech solutions to climate change make better use of existing resources

- Orange County Water Reclamation Project
  - Cost: \$487 million
  - Capacity: 70 million gallons per day
  - Water price: \$600 per acre foot

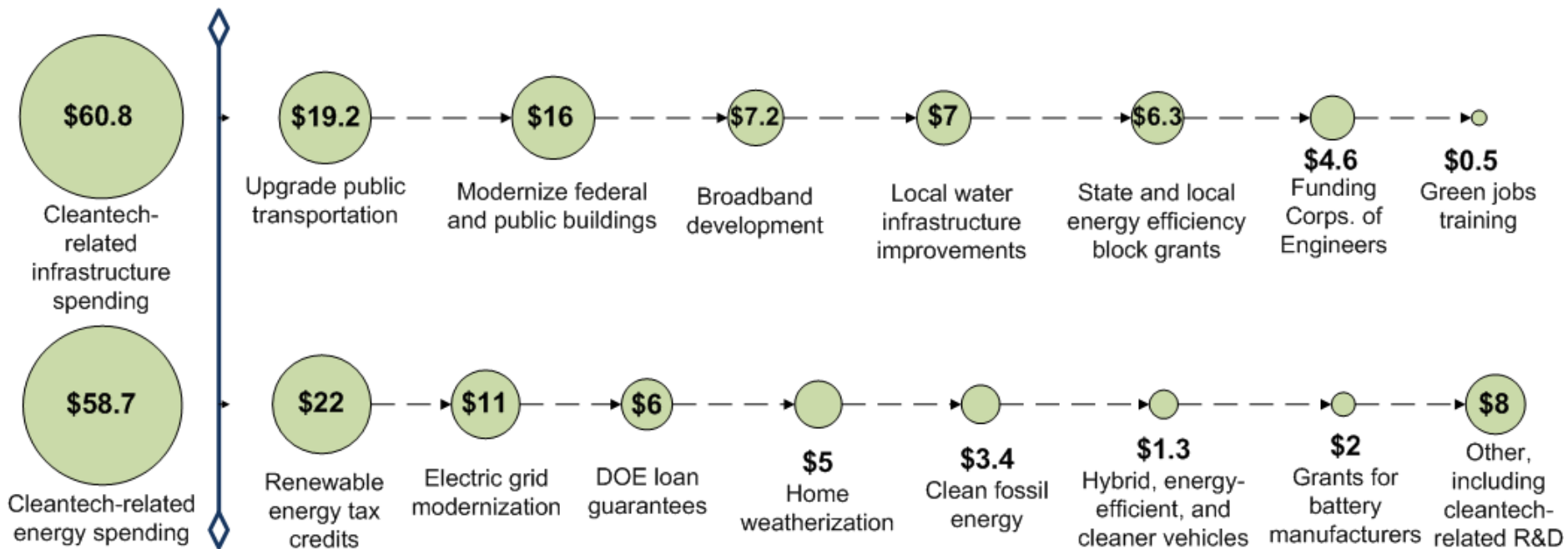


# Global cleantech investing has increased steadily



# Cleantech is establishing itself as a key driver to broad, economic recovery in the US

- 2009 Stimulus Bill: \$120 billion for cleantech



# California is the world's most important cleantech market



- More than 30% of 2008 global cleantech investments were made in California
- California is setting the tone for federal and state-level environmental policy
  - California's aggressive Renewable Portfolio Standard motivated other states to adopt similar policies
  - CARB's recent ruling on a Low Carbon Fuel Standard is expected to be adopted more broadly
- 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

# Cleantech opportunities abound in California

- Emissions control and compliance
  - CARB will continue to lead efforts to mitigate public health effects of greenhouse gas emissions from mobile and stationary sources
- Energy management
  - Population growth and climate effects will stress an electrical grid in need of modernization
- Renewable fuels
  - Low Carbon Fuel Standard sets precedent for considering net environmental effect of fuel sources
- Water
  - Severely underpriced and increasingly scarce resource requires new technologies and infrastructure



# Future demand for sustainable investing

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*“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.”*