Talking Points/Research in support of AB32

Job Creation

- **Summary Job Creation Points**
  - Clean energy jobs grew 2.5 times faster than the overall workforce from 1998 to 2007; clean energy jobs increased by 9.1% from 1998 to 2007 compared to 3.7% growth for all US jobs during the same time period. (Pew Charitable Trusts, June 2009)
  - In California, energy efficiency policies have created 1.5 million jobs and $45 billion for downstream industries since 1972 in addition to $56 billion of household energy savings. During this time, Californians reduced per capita energy consumption to a level that is 40% below the national average. (Center for Energy, Resources, and Economic Sustainability, UC Berkeley, October 2008)
  - Spending $1 million on clean energy investments is estimated to produce 16.7 jobs compared to only 5.3 jobs for the same amount spent on fossil fuel industries. (Political Economy Research Institute, University of Massachusetts, Amherst, June 2009)
  - There are currently about 3,000 green businesses in California accounting for 44,000 jobs in professional, scientific and technical services, construction and manufacturing. (Center for Labor Research and Education, UC Berkeley, February 2009)
  - California's AB 32 is estimated to increase GDP by $74 billion and generate 89,000 new jobs by 2020. (Climate Center, UC Berkeley, August 2006)
  - It is estimated that the American Recovery and Reinvestment Act will create about one million new jobs from fund directed toward clean energy. (Dan Weiss, Center for American Progress, December 2009)

- **CleanEdge-Clean Tech Jobs Report 2009**.
  - In a **Pew Charitable Trusts report** published in June 2009, clean-energy jobs, defined as jobs in renewable energy, energy efficiency, environmentally friendly production, conservation and pollution mitigation, plus related training and support, accounted for half a percent of total employment in the U.S. – 770,000 jobs in 2007**.**
  - The Pew report also found that clean-energy jobs are growing faster than other sectors, increasing by 9.1 percent from 1998 to 2007 compared to 3.7 percent growth for all U.S. jobs over that same time period.
  - The solar PV industry alone now represents approximately 200,000 direct and indirect jobs globally, while the wind power sector includes more than 400,000 direct and indirect jobs globally.
  - In a June 2009 publication of The Political Economy Research Institute, the report stated that the number of U.S. direct jobs created per million dollar

investment in building retrofits and smart grid is far greater than direct jobs created in the coal industry, by a factor of 8:1 and 5:1 respectively.

- **The Blue Green Alliance.**
    - Renewable energy technologies can provide, on average, four to six times as many jobs as equivalent investments in fossil fuels when manufacturing, installation and operations and maintenance jobs are all accounted for. For example, natural gas power plants generate only about one job per megawatt (MW) during construction and ongoing operations and maintenance, while equivalent investments in solar photovoltaic power technologies would generate over seven jobs per MW.
    - Studies performed by the California Energy Commission (2002), Union of Concerned Scientists (2006), University of California-Berkeley (2004/2008) and Center for Energy Efficiency and Renewable Technologies (2009), all confirm that renewable energy sources generate greater employment than equivalent investments in fossil fuels. While the job impacts vary according to specific technologies, a general rule of thumb is four to six times as many jobs per renewable energy MW as conventional coal or natural gas power supplies.

- **The Clean Tech Network-Cleantech 2009.**
    - The Emergence of a Low Carbon Economy. Estimates show that 2,700 direct jobs are created for every $100M in venture investment. The report projects that venture investments between 2007 and 2010 in this sector will be between $14-19B, resulting in 400,000 to 500,000 new direct jobs in the United States.

    - The implementation of AB 32 will contain a collection of performance standards and market mechanisms that stimulate cleantech, green jobs, and will provide true competition in the energy market. California needs to maintain the current implementation schedule.

- **UC Berkeley Center for Labor Research and Education- Addressing the Employment Impacts of AB 32, California's Global Warming Solutions Act.**
    - The most comprehensive California-wide study estimates that there are currently about 3,000 green businesses in the state, accounting for about 44,000 jobs. Green businesses, defined as products and services that reduce environmental impact or improve natural resource use, are concentrated in energy generation and energy efficiency services. By North American Industry Classification System (NAICS) sectors, the study finds that 36 percent of

California's green businesses are in professional, scientific and technical services; 19 percent are in construction; and 15 percent are in manufacturing. These green businesses and jobs are likely to expand rapidly as AB 32 is implemented.

- **Collaborative Economics-Clean Technology and the Green Economy, 2008.**
  - Looking specifically at the impact of the California Global Warming Solutions Act (AB 32), the results of the macroeconomic analysis indicate that by 2020 the State would reap a $74 billion increase in GDP and would generate 89,000 new jobs.

- **The Pew Charitable Trusts- The Clean Energy Economy, June 2009.**
  - By 2007, more than 68,200 businesses across all 50 states and the District of Columbia accounted for about 770,000 jobs that achieve the double bottom line of economic growth and environmental sustainability.
  - Pew's research shows that between 1998 and 2007, clean energy economy jobs—a mix of white- and blue-collar positions, from scientists and engineers to electricians, machinists and teachers—grew by 9.1 percent, while total jobs grew by only 3.7 percent.
  - Pew's analysis shows that every state has a piece of America's clean energy economy. Texas, for instance, generates more electricity from wind than any other state, had more than 55,000 clean energy economy jobs in 2007, and attracted more than $716 million in venture capital funds for clean technology between 2006 and 2008. Tennessee has succeeded in cultivating jobs in recycling, waste treatment and water management, among other conservation industries; jobs in Tennessee's clean energy economy grew by more than 18 percent between 1998 and 2007, compared with 2.5 percent growth in all jobs in the state.
  - In 38 states and the District of Columbia, job growth in the clean energy economy outperformed total jobs growth between 1998 and 2007. In a number of states, job gains in the clean energy economy have helped lessen total job losses.
  - California has more jobs in the clean energy economy than any other state—more than 125,000—a number that grew annually by an average of 0.9 percent between 1998 and 2007.

- **Political Economy Research Group at the University of Massachusetts, Amherst.**
    - U.S. can create two million jobs by investing in a rapid green economic recovery program, which will strengthen the economy, increase energy independence, and fight global warming.

Health Costs

- **Union of Concerned Scientists research on new California Diesel Fuel rule**
    - CARB estimates the new smog and particulate rule will cost $5.5 billion over the next 15 years, but it calculates that the benefits in reduced hospitalizations, asthma attacks and other health problems would be between $48 billion and $68 billion over the same period. Acknowledging that some truck owners would need financial assistance to meet the new standards, the state plans to establish a loan program.
    - In terms of the health care costs of pollution related to diesel fuel, research in California shows that the use of conventional diesel fuel is the state's largest source of particulate matter (PM) emissions. These diesel fuel related PM emissions are responsible for an estimated 3,000 premature deaths, 70% of the state's cancer risk, 2,700 cases of bronchitis, and 4,400 hospital admissions, ultimately creating additional health care costs totaling $21.5 billion[6].

- **Natural Resources Defense Council**
    - Policies in California's plan to curb global warming that also reduce air pollution, smog, and toxic pollutants will prevent an estimated 780 premature deaths and thousands of other negative health impacts, saving $2.2 billion in health costs in the year 2020.

- **National Academy of Sciences, commissioned by the U.S. Congress**
    - The findings of a study on the health costs resulting from our use of fossil fuels that was commissioned from the National Academy of Sciences by the U.S. Congress was released in November 2009. The study found that the annual health costs are about $120 billion. The majority of these costs are related to premature deaths as a result of pollution as well as preventable diseases like asthma. None of these costs can be found in the price we pay for a gallon of gas or a kilowatt-hour of electricity.

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Food Security

- **Lawrence Livermore National Laboratory & Carnegie Institution at Stanford University**
  - Global production of the six largest crops suffered significant losses due to global warming between 1981 and 2002. The study also found that global wheat growers lost $2.6 billion in 2002. None of these costs end up on our monthly utility bill.

National Security

- **RAND Corporation**
  - 2009 study looked at the cost to the U.S. taxpayer of protecting the supply and transit of oil from the Persian Gulf. The study found that the annual cost to U.S. taxpayers is more than $90 billion – about 12-15% of the current U.S. defense budget.

Economic Security

- **Report Submitted to the G20 London Summit, April 2009**
  - Without the transition towards a low-carbon global energy system, the next economic crisis is pre-programmed. 'Green' recovery programmes are not only an option for sound and effective crisis relief; they are a precondition. Providing a stimulus to the economy and protecting the climate do not stand in opposition to each other. Quite to the contrary, well-designed stimulus packages that give priority to spending on 'green' measures designed to avoid carbon emissions can simultaneously help to stabilise aggregate demand in the short run (thus contributing to a quick recovery of the global economy) and yield (potentially large) positive economic returns in the medium and long run by developing the world economy's low-carbon growth potential. Most measures aimed at reducing GHG emissions are related to the improvement of existing capital stocks and development of new technologies. Thus climate change policy can create opportunities for savings to be directed into valuable real capital and wealth formation.

- **TEEB Report, 2009 - The Economics of Ecosystems and Biodiversity for National and International Policy Makers – (**TEEB is hosted by the United Nations Environment Programme and supported by the European Commission, the German Federal Environment Ministry and the UK government's Department for Environment, Food and Rural Affairs, recently joined by Norway's Ministry for Foreign Affairs and The Netherlands' Ministry of Housing, Spatial Planning and the Environment)
  - The TEEB D1 Report for policy makers takes as its starting point that by failing to account for the value of ecosystems and biodiversity, we will make the wrong choices in responding to these and other challenges. It demonstrates that understanding and capturing the value of ecosystems can lead to better

informed and possibly different decisions; accounting for such value can result in better management; investing in natural capital can yield high returns; and sharing the benefits of these actions can deliver real benefits to those worst off in society. This evidence and the arguments we develop in the Report provide a strong case for broad policy action. Put simply, making the benefits of biodiversity and ecosystem services visible to economies and society is necessary to pave the way for more efficient policy responses.

- The essential role of regulation**.** Regulation defines rights by setting out clear rules on the uses of biodiversity and ecosystems that are legally allowed, defining offences and deterring non-compliance. Regulations can also set limits and boundaries to the use of natural assets and resources through the issue of permits and prohibitions. These may provide an effective framework for ensuring the sustainable use of natural resources, reducing pollution and hazardous events that harm natural resources and for triggering urgent environmental improvements when needed. More broadly, strong regulatory baseline is an essential precondition that other policy options can build upon, including payments for environmental services.

- It is hard to think of any other asset where we would tolerate its loss without asking ourselves what we risk losing and why. The more that we ask these questions, the more uncomfortable we become with the current situation where nature is being lost at an alarming rate. We realise that we often fail to ask the big questions about what ecosystem services and biodiversity provide and their value or worth to different groups of people, including the poorest, across the globe and over time.