

Global Warming: a Time to Act  
- *U.S. Senator Dianne Feinstein* -  
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Today, I am here to discuss global warming -- the single greatest environmental challenge facing this planet. So let me explain the gravity of the problem. Bottom line: the fuel we use to power our homes, our cars, and our businesses is causing the earth to warm faster than anyone expected.

The first seven months of this year, and the last three decades, were the warmest in the United States since national record-keeping began in 1895. And the Earth's temperature has climbed to the highest point it has been in the past 12,000 years.

A scientific consensus has been forged. There is broad agreement that the Earth will only get hotter. The question is how hot and why?

First, how hot?

If we act now and further temperature increases are kept to 1 to 2 degrees Fahrenheit by the end of this century, the damages -- though significant -- will be manageable. But if we don't act, and warming increases by 5 to 9 degrees by the end of this century, the damage will be catastrophic and irreversible.

So we must act now.

Each of us is confronted with a choice: a choice that will impact not only our future, but the futures of our children and grandchildren. Do we continue with a business-as-usual attitude? Or do we make the changes necessary to prevent catastrophe?

Now for the question, why?

Quite simply, because we are addicted to fossil fuels. And it is the burning of these fuels -- coal, oil, gasoline and natural gas and the greenhouse gases they produce -- that is the primary cause of global warming.

Carbon dioxide is produced by power plants, cars, manufacturing, and to power residential and commercial buildings. And here is the key: Carbon dioxide doesn't dissipate. It stays in the atmosphere for five decades or more -- causing the Earth's temperature to rise.

That means that the carbon dioxide produced in the 1950s, 1960s, 1970s, and 1980s is still in the atmosphere today. And the carbon dioxide produced today will still be in the atmosphere in 2050 and beyond.

And there will be serious consequences for our planet unless we make major changes. Leading scientists say that to stabilize the planet's climate by the end of the century, we need a 70 percent reduction in carbon dioxide emissions below 1990 levels by 2050.

So the goal should be to stabilize carbon dioxide at 450 parts per million by 2050. This could contain further warming to 1 to 2 degrees Fahrenheit.

The Earth has warmed 1 degree in the past century, and we are now seeing the dramatic effects:

- Oceans are rising; coral reefs are dying; species are disappearing; glaciers are melting.

We learned just last week that Greenland is now losing 20% more mass than it receives from new snowfall each year. And it will shrink further as the planet warms.

- Extreme weather patterns have emerged – heat waves, droughts, hurricanes, floods – and they are occurring with greater frequency and greater intensity.
- In 2003, heat waves caused 20,000 deaths in Europe and 1,500 deaths in India.
- And the number of Category 4 and 5 hurricanes has doubled since the 1970's. Katrina alone is testament to that.

And things will only get worse as Earth's temperature rises. The question is: how much will the increase be?

If nothing is done...if the Earth warms 5 to 9 degrees Fahrenheit, the face of our planet will change forever.

The Greenland and Western Antarctic ice sheets would melt completely. These two ice sheets currently hold 20 percent of the Earth's fresh water.

Sea levels could well rise by 20 feet. Think about the damage that would cause to coastal areas around the world.

Additionally, hurricanes, tornadoes and other severe weather would become more volatile than ever. Malaria would spread.

Here in California: More than half of the Sierra snowpack would disappear. This is equal to the water supply for the 16 million people in the Los Angeles basin.

The rise in sea levels would cause catastrophic flooding – and the Los Angeles basin would be especially vulnerable.

Catastrophic wildfires would more than double.

We had a mild taste of that future in July. Here in Los Angeles, temperatures spiked to well above 100 degrees. And it was far worse in other areas of the State.

I met recently with scientists from the Scripps Institute of Oceanography.

And they said to me that if they have erred, it has been because their climate projections are too conservative and the Earth may be much closer to a tipping point than science has shown thus far.

And if we move beyond that tipping point, catastrophe becomes a certainty. You can't go back, because the carbon dioxide remains in the atmosphere for so long.

That's why we must act soon and decisively.

The question is: what should we do?

The United States emits some 25 percent of the world's greenhouse gases, and we're 4 percent of the world's population. So we are the big producer.

The largest contributor to global warming is electricity generation -- 33 percent -- followed by transportation -- 28 percent. These two sectors combine to make up 61 percent of the problem.

The remaining contributors are:

- Industry – 20 percent
- Agriculture – 7 percent
- Commercial – 6.5 percent
- Residential – 6.5 percent

Let me be clear: there is no silver bullet. There is no one thing that we can do to solve the problem. Every business, home, and industry must do its share. So what can be done?

Let me begin with electricity generation. This is the single largest piece of the global warming puzzle -- responsible for 33 percent of global warming gases in the United States. And the biggest culprit here is pulverized coal, which is the major source of energy in 40 of the 50 states.

Coal, alone, produces 27 percent of annual carbon dioxide emissions, or 2.1 billion tons every year.

Globally, coal produces 9.3 billion tons of carbon dioxide every year -- or one-third of all global greenhouse gas emissions. So it's critical that we find ways to clean up coal.

Earlier this year, the Senate Energy Committee held a symposium on global warming. The consensus was that a mandatory cap-and-trade program would be the most effective way forward. And so we are working to create such a program.

We would begin with two bills -- one for electricity and one for industry.

Here's how it would work: we would cap the amount of global warming gases -- including carbon dioxide and nitrous oxide -- and that cap would be established on all major emitters.

In all likelihood, the cap would remain at present levels for a few years to give the industry the opportunity to make the changes necessary. Gradually, these caps would be tightened, and emissions reduced.

Electricity producers would have two ways to meet the cap:

- Either implement new technologies, or

- Purchase credits from other companies that have reduced their emissions below the target cap. (*A credit essentially is an allowance to emit a ton of greenhouse gases.*)

So, the cap would be met—and carbon dioxide would be reduced over time.

One of the key elements of our program is to put agriculture in the system. We would allow farmers and foresters to earn credits for moving to greener farming practices.

These include:

- Tilling land less frequently;
- Planting trees on vacant land; and
- Converting crops to those that can be used for bio-fuels.

Farmers and growers would be able to earn dollars for acres converted to carbon sequestration and reduction.

Next we need to include other major industrial producers of carbon dioxide in a similar regime.

The fact of the matter is that cap and trade has worked before. It's not a revolutionary concept. Using the Clean Air Act, a cap-and-trade regime was implemented in the 1980s to reduce sulfur dioxide and nitrogen oxide emissions from electric utility plants in the northeast. These are the primary culprits of acid rain.

In the 16 years, this scheme has been in place, sulfur dioxide emissions have been reduced by about 34 percent (5 million tons) and nitrogen oxide emissions have been reduced by 43 percent (3 million tons). So cap and trade can be effective.

And, the governors of seven northeastern states are instituting a cap-and trade system known as the Regional Greenhouse Gas Initiative. It will become effective in 2008.

The plan is to cap carbon dioxide emissions from electricity plants at current levels until 2015; and then begin reducing emissions incrementally to achieve a 10% reduction by 2019.

And last week, Governor Schwarzenegger announced that California may well join the Northeast regional system in the trading of credits.

At the same time, I am pleased to announce that I am very close to reaching agreement with the Clean Energy Group of utilities on a cap a trade regime for electricity.

The Clean Energy Group consists of PG&E, Florida Power and Light, Exelon, Entergy, Calpine, and Public Service Enterprise group.

These companies produce 15 percent of the energy consumed in the United States today – 150,000 megawatts out of the 1 million megawatts produced nationwide. This is enough energy to power 150 million homes.

I will be introducing the legislation in the new session of Congress.

Let me take up transportation -- cars, trucks, planes, and cargo ships, which represents 28 percent of carbon dioxide emissions.

And passenger vehicles alone – cars, light-trucks, and SUVs – make up 20 percent of all U.S. emissions (1.2 tons).

Fundamentally, there are two ways to reduce these emissions.

1. Improve the fuel efficiency of vehicles.
2. Move away from oil and gasoline-based fuels and toward alternatives.

I believe we need to do both.

The good news is that the technology exists to significantly improve the fuel economy of these vehicles. The bad news is that Detroit and many foreign auto makers refuse to utilize the technologies.

So Senator Olympia Snowe of Maine and I have offered legislation that would require the mileage for all cars, pick-up trucks, and SUVs to be increased from 25 to 35 miles per gallon over the next 10 years.

We call it the “ten-by-ten” bill.

If this bill becomes law:

- We would save 420 million metric tons of carbon dioxide by 2025. That is the equivalent of taking 90 million cars off the road in one year.
- And we would save 2.5 million barrels of oil a day by 2025. By coincidence, this is the amount of oil imported daily from the Persian Gulf.

This is a simple solution, and it can be accomplished.

The other side of the transportation coin is new technologies and alternative fuels. As long as our nation continues its addiction to oil, we cannot sufficiently slow the warming trend. That's why we need to develop new, clean technologies and alternative fuels.

This includes the electric plug-in hybrid, biofuels, E-85 using cellulosic ethanol, and fuel cells.

The good news is that substantial venture capital funding is available today for clean energy projects. Here are just a few of the most promising:

- Last week I visited a Silicon Valley start-up -- Bloom Energy -- that is developing clean fuel cells that will produce both electricity and hydrogen to fuel our vehicles.

The fuel cell has cathode ink on one side, anode ink on the other, separated by zirconia sand covered plastic, which becomes the catalyst. The size is about 4 inches by 4 inches. It alone can power a 30 watt light bulb for 5 years.

Together these fuel cells can be combined to fit in a parking space, and can power a 20,000 square foot building.

The electricity is produced -- with no carbon dioxide emissions -- only water and hydrogen.

This is the future, and this is what we ought to be supporting.

- It is also my understanding that Bill Gates has joined with venture capitalist Vinod Khosla to spearhead investment efforts in ethanol plants which, when completed, will produce 220 million gallons by 2009.
- Others are investing in new ideas -- inexpensive solar panels, windmills that can be built in your backyard for \$10,000, and geothermal energy that harnesses the heat of the Earth.
- Chevron has formed a strategic research alliance with the National Renewable Energy Lab in Colorado to advance the development of biofuels. It is also working with scientists at UC Davis to develop cellulosic ethanol.
- And Los Angeles has become a "Climate Action Leader" and has registered its greenhouse gases and will be seeking to reduce its emissions.

These efforts are so important, and I want to encourage you to support them.

So that's the electricity and transportation sectors. But America needs to become much more energy efficient as well -- both in terms of green building codes and individual conservation and energy use.

An aggressive energy national efficiency program could prevent a substantial amount of carbon dioxide going into the air.

This is the third prong of my proposal.

This would come from the incorporation of energy efficient building materials in construction -- such as insulation, more efficient windows, and renewable technologies like solar or wind.

Green construction is also cost-effective. An initial \$100,000 investment can result in a savings of \$1 million or more over the life of a building of 20,000 square feet -- that's about the size of a Safeway or Borders bookstore.

And the bigger the building, the greater the potential savings.

Individuals can also make a difference. This means carpooling, using energy efficient light bulbs, and choosing ENERGY STAR appliances.

ENERGY STAR home products, such as air conditioners, furnaces, refrigerators, dishwashers, phones, DVD players, and televisions, must become standard for all Americans.

In 2005, these products saved consumers \$12 billion, and reduced emissions by nearly 5 percent.

These are easy to do, and they can really make a major difference.

So early on in the 110<sup>th</sup> Congress, I plan to introduce a series of bills to meet these goals:

1. A mandatory cap-and-trade program for electricity.  
A mandatory cap-and-trade program for industry.
2. Then “ten-by-ten bill,” requiring increased mileage of 10 miles per gallon within the next 10 years. That means mileage would go from 25 to 35 miles per gallon.
3. An alternative fuels bill that requires 70 percent of all vehicles produced after 2014 to be flex-fuel capable. The cost is small, \$100 per vehicle.

These vehicles would be required to have a green gas cap to show the owner that the car can accept other fuels.

We would also require that gas stations owned and operated by major oil companies have at least one pump that provides alternative fuels at every station.

4. The fourth bill will be a national energy efficiency program -- including strict appliance and building standards and requiring utilities to use energy efficiency measures to meet a portion of their demand.
5. Elimination of the protectionist tariff (54 cents per gallon) placed on Brazilian ethanol. This was done at the behest of the corn industry – to make imported ethanol non-competitive. It is estimated that Brazilian produced E-85 will be cheaper and work better.

And Senator Craig Thomas and I are working on a plan to use Wyoming Powder River Coal to produce cleaner electricity by sequestering carbon dioxide. The power will then be sold to Western States including California.

These bills are just the beginning.

Additionally, the U.S. must make addressing global warming a top priority and join the European Union and other nations in reducing emissions. We can, and must lead. But this won't solve the problem.

Here's why: the United States certainly leads in the production of greenhouse gases, but we are closely followed by China, Europe, Russia, Japan, and India. So all countries must participate.

The Kyoto Protocol is certainly not perfect, and it will expire in 2012. So the U.S. needs to gear up and be a leader.

At the same time, the United States should also lead an effort with China to create a public-private partnership fund to prioritize bilateral global warming projects.

China's coal use outpaces that of the United States, EU, and Japan combined. Coal accounts for 70 percent of China's energy needs. China is building a new pulverized coal power plant every week. China will soon pass the United States as the biggest emitter of carbon dioxide. If China continues its course, it could cause carbon dioxide levels to quadruple. So it's vital to engage China.

That is why a private/public partnership that funds key carbon dioxide reduction projects on a bilateral basis is so important.

The business community should consider investing in joint ventures to develop clean power quickly in China, as well as the United States.

Bottom line: now is the time to act.

And here's what I'd like to ask you to do. Please support these bills.

Let the members of the House and the Senate you support them.

Right now, the mentality of the congress is do-nothing, and it won't work.

The choice is clear. It is time to stop talking and to begin acting.

Thank you.