"Climate Change is Everyone's Challenge"

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Keynote Address
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Climate change is one of the most important and urgent issues confronting our state, the nation, and the entire world. Today, I am going to talk about why global climate change is everyone's challenge, and what the California PUC is doing about it.

Our Governor and the California State Legislature have led the way on climate change. As Governor Schwarzenegger has declared, "The debate is over, the science is in, and the time to act is now."

Our Governor and the Legislature have led the way nationally on climate change issues by putting into law a landmark climate change bill known as Assembly Bill 32. This bill calls for a reduction in the state's greenhouse gas to 1990 levels by the year 2020. The Governor has further called for the state to reduce carbon dioxide emissions to 80 percent below 1990 levels by the year 2050.

Unfortunately since 1990, California's greenhouse gas emissions have *increased* by over 17 percent. In fact, greenhouse gas emissions are continuing to grow as the California economy continues to grow. Thus, meeting the state's climate change goals is going to be a huge challenge.

At the California PUC, our job is to craft regulatory policies to reduce green house gas emissions from the sectors we regulate – electricity and natural gas.

I've come to these energy issues from a background in telecommunications. In the mid Nineties, I had the marvelous experience of serving as a Commissioner of the Federal Communications Commission. During my tenure, the Telecommunications Act of 1996 passed. This law was very important because it was the first major change in our nation's communications law since 1934. The '96 Telecom Act recognized the huge changes happening in the communications sector. These changes included the rise of the Internet, new wireless technologies such as cell phones and satellite systems, and digital television. I think you will agree that this communications revolution has transformed modern life.

I see climate change driving a similar technological revolution in the energy world. I expect to see in my lifetime the following:

* Highly energy efficient homes and commercial buildings that produce as much energy as they use.

* New forms of alternative energy, including renewable energy from solar, wind, and geothermal sources.

* New energy meters that will give consumers more information and control over how they use energy

* New smart appliances that a consumer can preprogram to respond to energy prices to save energy and money.

* Clean green cars running on alternative fuels or that plug in to your garage electrical socket to charge up over night.

* A smarter electric grid that ties it all together and can anticipate power outages before they happen.

I am going to going into further detail in each of these areas and discuss how the PUC has been working hard on policies that will decrease our reliance on fossil fuels.

Energy Efficiency

Here at the SoCal Builder Expo, it is the perfect place to talk about energy efficiency. Energy efficiency means things like building standards to reduce energy use in a building. Examples are energy efficient cooling and lights that automatically turn off when no one is around. Energy efficiency also includes appliance standards that reduce energy usage by your washer/ dryer or fridge. By reducing our energy usage, we don't have to build unnecessary power plants, which are tough on the environment.

California is proud to lead the nation in energy efficiency. Along with the California Energy Commission, the PUC has put in place policies that have increased the use of energy efficient technologies, such as compact fluorescent light bulbs and Energy Star appliances. In fact just last week, the California

Energy Commission adopted new energy efficiency building standards for new construction.

Last fall, the PUC adopted some new initiatives of special interest to the building industry:

- All new residential construction in California will be zero net energy by 2020, and new commercial construction will follow by 2030. Zero net energy generally means a house generates as much energy as it uses over a year.

- The heating, ventilation, and air conditioning industry will be reshaped to improve the energy efficiency of these systems. .

These are challenging new initiatives for the building industry, but I feel confident you can do it.

Renewables

In the renewable energy area, the PUC is advocating less reliance on fossil fuel by the energy utilities, and instead switching to renewable energy sources, like wind, solar, geothermal, and even ocean waves.

The PUC is implementing the Renewable Portfolio Standard, a law that requires the state's electric utilities to provide twenty percent of their electricity from renewable energy sources by 2010. This is a huge challenge for the utilities, because the state needs to build new transmission lines to bring the renewable energy from places where it is generated (think hot deserts and windy hills) to the places where it can hook into the electric grid. Transmission lines are time consuming to build, due to environmental and other siting issues.

The PUC is also implementing the California Solar Initiative, with the goal of a "Million Solar Roofs" for California. Over the next decade, hundreds of thousands of small solar panel systems will be installed on houses and businesses throughout the state. The PUC has developed an incentive program to encourage this large solar deployment. This initiative has been a catalyst for the solar industry.

I tried to put a solar roof on my home in San Francisco, but sadly, the solar roof company told me I was out of luck because a large tree that shades my house much of the day. Darn, I have had to settle for driving a Prius.

What is exciting is that the scale of the proposed solar projects is growing rapidly. Southern California Edison has just proposed a 2.2 megawatt project to install solar panels on two square miles of warehouse roofs—starting nearby in Fontana. It will power 1, 426 homes in Southern California. The project is currently under consideration at the PUC.

We are also seeing proposals for a new generation of large, utility-scale solar power plants. The Mojave Desert is one of the most attractive locations in the country for solar energy. In fact, the Inland Empire, Riverside and San Bernardino counties are fast becoming the nation's hot spots for solar energy.

The variety of these solar technologies is impressive. Some use parabolic troughs of mirrors to concentrate the sun and produce steam. Others use mirrors to concentrate heat on the top of a tower that is hundreds of feet high. I have been very impressed with the creativity of the private sector to make solar work. It is this entrepreneurship that makes me optimistic that technology will help us find a way to a large-scale solution to global warming.

But it will also involve some low-tech, but high impact, solutions.

One of my favorite low-tech solutions is poo gas. Yes, it is exactly what it sounds like. Gas captured from cow manure, cleaned up and put into the natural gas pipeline system. The more refined members of the audience may prefer I use the technical name—bio gas.

Bio gas is primarily composed of methane, and methane is 23 times more potent than carbon dioxide in trapping heat in the atmosphere. That means capturing the bio gas and burning it in a power plant or a home appliance has a big impact on reducing greenhouse gas emissions.

AMI

Another area that I have particular interest in is empowering consumers to reduce their greenhouse gas impacts by giving them more information about their energy usage on a real time basis through a smarter electric meter. Smart meters will transform the way consumers think about energy.

Statewide electric demand varies from season-to-season and even from hour-to-hour. When electricity demand is high in the afternoon, the least efficient and most polluting power plants are turned on.

This is where the new Smart Meters come in. Smart meters are new meters that give the energy utility the ability to communicate with each customer via a one or two-way communications system. So the energy utility no longer has to send out a meter reader to read your meter, the meter will send usage information back to the utility every 15 minutes. No longer will you have to call the energy utility to tell them your lights are out. They will know right away when an outage occurs and where it is.

In the future, these smart meters will send real time energy price information to your meter. The PUC is going to combine real time energy information with future time-varying rate plans -- where energy will cost more during peak afternoon house and be cheaper during nights and weekends when demand is low for electricity.

For the first time, customers will be able see how their energy usage varies on an hourly basis, or even more frequently. Armed with this information, consumers will be aided by new technologies like in-home devices that can turn off their pool pumps or raise their air conditioners a few degrees when energy prices are high. A consumer will be empowered to control energy usage in ways like these, with the goal of saving money, and helping the utilities not have to turn on the more polluting power plants by reducing demand during peak hours.

Since I've been at the PUC, we have authorized Pacific Gas and Electric and San Diego Gas and Electric to upgrade all of their electric and gas meters to Smart Meters. Southern California Edison is the next utility in line.

Smart Grid

Smart Meters are going to be part of what is being called a Smart Grid. Think of the Smart Grid as the merging of the electrical infrastructure with a communications or intelligence infrastructure. The Smart Grid allows a utility to better communicate with each part of its electric system to see what is working and what is not.

A smarter grid can increase reliability, lower costs, and improve the environmental impact of the grid by reducing greenhouse gas emissions.

Adding more renewable energy and consumer devices into the electric grid makes it more challenging to manage the system. For example, wind turbines produce energy when the wind blows, which can be very intermittent. Solar roofs produce more electricity on sunny days than on cloudy days. Power is also coming from traditional power plants. A Smart Grid can help keep the whole system in balance, by communicating information about the system constantly to the system operator.

The Smart Grid will have many impacts on consumers. If you have a solar roof or fuel cell to produce your own electricity, it will help the utility company keep track of how much energy you use and contribute to the electric grid when you produce more electricity than you use. If there is a situation that normally would cause an outage, a Smart Grid may help prevent it by sensing it and alerting the utility. It is in this Smart Grid world, that we predict plug in hybrid cars that will charge overnight and carry you around town on battery power.

Cap and Trade

Now I'd like to step back and talk about how all these policies are going to come together to tackle climate change. Energy efficiency, renewables, advanced metering, and the Smart Grid are going to help get us there, but we also need solutions that we haven't even thought of yet.

In order to implement AB 32, the greenhouse gas bill, the PUC is providing input to the California Air Resources Board, the state agency, which is tasked with developing statewide policies for all types of emissions in the state.

Thus far, California has relied on traditional "command and control" regulation. This means policymakers identify a way to cut emissions and order the polluter to do it.

The problem is, we regulators don't have all the answers on a global problem like climate change. California needs policies that will unleash the creativity of the marketplace to solve such a big problem. That's why in March, the PUC and Energy Commission recommended that greenhouse gas emissions in the electric sector in California be regulated through a market-based approach known as cap-and-trade.

A cap-and-trade system for greenhouse gas emissions in California would follow on the success of the federal Acid Rain cap and trade program. The Acid Rain program slashed harmful sulfur dioxide emissions in the northeastern US at a fraction of the cost that forecasters had predicted under traditional regulation. Similarly, a market based mechanism like cap and trade will cut greenhouse gas emissions at the lowest possible cost. That's good for the California environment, the economy, for consumers, including the least well-off.

An important issue you may hear about if you follow these debates is how to distribute emissions allowances under the cap and trade system. The PUC is considering this issue right now.

I understand that many of the municipal utilities in southern California have relied heavily on coal-fired generation for their power. This includes LADWP and the City of Riverside's utility.

Some methods of distributing allowances would have a disproportionate impact on the customers of these utilities. I believe we need a system that is fair to all consumers and will support our mutual objective as set forth by AB32 —to cut greenhouse gas emissions. This is not a time for finger pointing but a time for collaboration for the good of all our utility customers in California. Let's keep our eye on the goal, which is greenhouse gas reduction.

Conclusion

Sadly, there is no silver bullet that will eliminate our dependence on fossil fuels in the short-term, but as you have heard, California is not afraid to lead the nation with bold actions. I commend the Green Valley Initiative for its outstanding efforts in making the Inland Empire, Riverside, and San Bernardino part of the solution for its residents.

My final plea to you is to help us save the planet for the next generation. Inaction means more global warming, and the certain negative impacts on our mother earth. Please, be a catalyst for a more earth friendly lifestyle in your company or your family. Think about your energy consumption, both professional and personal, and figure out what you can do in the short-term and over the long-term to reduce your carbon footprint.

Thank you for having me.