Cap and Trade Fees Could be Increased

to Compensate for Wildfire Victims' Losses

Submitted to the Commission on Catastrophic Wildfire Cost and Recovery

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Representing
Our Grandchildren's Future
March 7, 2019

Background

Mr. Schaefer is a retired engineer with more than four decades of experience in electric power and renewable energy. He holds an engineering PhD in from Stanford. Members of his family were evacuated as a precaution from the Tubbs Fire.

Wildfire Losses Reflect Challenges in a Changing World

Recent fires in California raise the concern that losses exceed the ability of insurance, governments and PG&E lawsuits to cover them. Future fires[1] will very likely make this deficit worse. The source of sufficient money to compensate victims' losses is currently unclear, and I am hopeful that the Commission on Catastrophic Wildfire Cost and Recovery (Commission) can resolve that complex issue.

Hopefully this contribution will help the Commission to make recommendations on "the following matters:

(1) Options for the Legislature and Governor to consider for enactment that would socialize the costs associated with catastrophic wildfires in an equitable manner.
(2) Options for the Legislature and Governor to consider for enactment that would establish a fund to assist in the payment of costs associated with catastrophic wildfires."[2]

Most of my submission deals with financial issues, but just as important are the extensive personal and psychological damages and losses that victims have suffered. We are facing a future with more such real damage unless we take prompt and unprecedented action.

My own granddaughter expressed a fear when she was eight that, "By the time my grandchildren grow up it'll be too hot to be alive." The future that young people face now in 2019 is bleak compared with that which previous generations enjoyed when we were young, unless we older folks take that unprecedented action.

Climate Losses Require Non-Traditional Compensation

[1] Fire is only one of many forms of climate damage so wherever the word fire appears, readers should understand that losses from floods (like Oroville might have been) and landslides should be included too. Similarly, all references to PG&E should be understood to include other utilities.
[2] SB901, Sec. 7.

This proposal suggests a heretofore unused source for victims' compensation from those responsible for climate change, which will simultaneously make renewable energy more attractive and eventually heal the climate.

The heart of the problem the Commission faces is a mechanism to allocate compensation for financial losses from wildfires among six entities:

1. Insurance companies,
2. PG&E (and other utilities facing this problem) liabilities in the courts,
3. Victim's loss entered as a negative number,
4. State and local governments,
5. FEMA, and
6. Those responsible for climate change.

New in the list above is entity 6, which I hope will be part of the Commission's findings and recommendations. The Commission has limited freedom to affect entities 4 and 5; and these values might be considered exogenous to this process. Lawsuits will probably decide what PG&E must pay, entity 2. The tradeoff is finding the right balance among among entities 1, 2, 3 and 6. Local government wildfire expenditures are substantial so they may be either a source of funding for other victims or they may be financial victims themselves.

I envision for each event (Tubbs, Camp, Carr, etc.) a matrix presentation for financial payments, with victims depicted row by row, and columns summarizing payments to victims by each of the six entities above.

Sums of each column with its negative and positive entries reflect the inflows or outflows involved with each entity. The entry in each row for those responsible for climate change (column 6) will be calculated as a remainder in that row, assuring that the row sum to zero for each fully compensated victim.[3]

[3] The world is not fair, however, so perhaps there should be another column to account for uncompensated losses. As an optimist I omit that column.

This process will be easier said than done. Victims will be compensated in part by a combination of insurance and FEMA and lawsuits, but each victim's story and compensation will be unique. Thus, each victim's need for compensation, reflected in his or her entries in the matrix, will be different from others'. To assure those needs are met but not excessively met, coordination will be required among insurance, FEMA, PG&E's lawsuits and government aid programs.

PG&E, insurance companies, governments and FEMA would probably like to shift the damage burden to those of us responsible for climate change. I agree.

Existing Cap and Trade Fees are Too Low

Cap and trade policy was designed to limit total emissions without attention to the value of losses the emissions actually cause. That and other policies like tax credits and rebates have supported renewable energy and electric transportation, and they have helped the crucial transition to renewable energy. But they haven't helped enough; in retrospect the caps should have been much lower.

Resultant cap and trade carbon fees have been too low to accelerate sufficiently the needed transition away from a fossil fueled economy. Those fees have hovered around $14 per tonne of carbon dioxide, whereas the IPCC estimates that a range of $135 to $5500 per tonne by 2030 is required to be effective.[4] So in spite of all that California has done about climate change, its carbon price is at least an order of magnitude too low. That certainly qualifies as a severe market distortion.

The target of 40 per cent carbon dioxide reduction by 2030 probably can't be met without higher fees, and in any case the 40 per cent reduction goal is insufficient, given the scale of damage already apparent in California.

[4] www.nytimes.com/2018/10/07/climate/ipcc-climate-report-2040.html The report emphasizes the potential role of a tax on carbon dioxide emissions. "A price on carbon is central to prompt mitigation," the report concludes. These high values reflect the exceptional damage that climate change is causing, and that there is no planet B.

Climate Losses Should Establish a New Floor for Fees that CARB Assesses

CARB can be redeemed, however, if the losses attributable to climate change (the sum of entries in column 6) are added to existing cap and trade fees, so that resources from the newly enhanced fees provide compensation the way insurance does, or could. This policy proposal hopefully corrects market distortions using empirical evidence from actual losses. It is a Pigovian economic application to correct a market distortion, rather than relying solely on cap and trade bidding for the right to pollute or on the legal system to remedy tort damages.

Justice requires that victims' losses not compensated by insurance, lawsuits against PG&E, governments and FEMA be covered somehow. I suggest this shortfall be covered by what I will call a "CARB Climate Damage Fund[5]," the total dollar value of losses from climate change in column 6, from each event.

The carbon fee per equivalent tonne of carbon dioxide[6] assessed to every supplier of fossil fuel is then calculated as the CARB Climate Damage Fund divided by the tonnes of carbon dioxide emitted in California. This quotient should serve as a new floor, to which prices established in CARB's cap and trade auction will be added, thus forming the new (higher) total charge that will be paid by fossil carbon suppliers and of course their customers.

This determination could be done on a periodic basis the way cap and trade auctions are. It may be necessary to average the calculation over several periods to prevent the fee from varying too much over time.

A question that's crucial to determination of the proposed CARB Climate Damage Fund and its disbursements is how to divide responsibility between PG&E and those who cause climate change. Is 50 per cent the right split? Probably not. Climate change's contribution will be viewed as higher for the Tubbs Fire (for which CalFire's recent finding suggests PG&E may not have

[5] This is might be a component of "social costs" in AB-197.
[6] Other greenhouse gas equivalents like methane should be included as well.

any responsibility) than for the Camp Fire (where PG&E's liability will be viewed as higher). I don't have a solution, except to urge the Commission establish a process that moves quickly rather than becoming enmeshed in a legal process of extended duration. And it may be that the split will tilt towards climate changers if PG&E really is maxed out.

SB901's Collection of Compensation Doesn't Address Climate Change

California's SB901 offered a way for PG&E to pay losses from the 2017 Tubbs Fire when the company was thought to have started it. PG&E is relieved, I'm sure, that they evidently weren't responsible, but the property owner in question certainly didn't have adequate liability insurance. One lesson for the future is that no fire starter for such big fires will have adequate insurance.

As enacted, SB901 enabled PG&E to issue bonds to pay for losses from those 2017 Tubbs damages. And as enacted, ratepayers would have been obliged to pay off those bonds through "nonbypassable fixed recovery charges." That is, every PG&E customer would have paid a higher customer charge, enhancing PG&E's bottom line but not affecting emissions at all. That would have been unfair, as the charge would have been laid on all customers regardless of their energy consumption.

More important, in charging only electricity customers SB901 ignored transportation fuels' much larger contribution to climate change. They should be included.

SB901 did address a complex range of issues other than financial coverage of damages, and appears to be a result of complex negotiation. Those issues of forest safety still remain but may not won't affect financial issues.

PG&E Started Some Fires

PG&E will surely face liability for the Camp Fire and it has started other fires, as have other utilities. Utilities' distribution lines in forested areas are vulnerable in hot, dry, windy conditions, and it'll be either impossible or very costly to trim trees sufficiently to eliminate completely the risk of fire. And such trimming won't be a one-time exercise because trees keep growing.

Undergrounding in forested ares would be so costly as make service prohibitively expensive.

The strategy most likely to reduce fire risk is to de-energize electric service during windy periods. Even that is unlikely to eliminate all risk.

Other options might permit the company not to serve customers at all in high risk areas, or to empower PG&E to provide isolated service from equipment with solar and batteries. Both will probably involve some legislative changes.

Lawsuits Against PG&E Can't Pay All Losses

PG&E's safety shortcomings are well known, and the company will probably be held liable in court for substantial damages. Estimates range up to $30 billion, which could well exceed its shareholder equity—$19 billion as of March 2019—so the fact is that PG&E may not have adequate assets to compensate for such losses. Thus, bankruptcy to escape liability is an appropriate business strategy for PG&E. But it's not appropriate from a social justice perspective because it could leave thousands of damaged victims without a remedy. In the best of all worlds those victims would have had insurance, but in fact many probably did not.

Insurance is not a free lunch, of course, and it may in the future become prohibitively expensive or unavailable in fire prone areas. A state run Insurance program would likely incur substantial losses unless supported by something like the proposed CARB Climate Damage Fund. Calculation of each party's losses that total to form the CARB Climate Damage Fund and the distribution of money from it will have to be done the way insurance companies do. Unless they are assuredly non-profit, insurance companies should not in my view be subsidized by the CARB Climate Damage Fund. Indeed the Fund itself might serve as the basis for public insurance.

Insurance premiums and parcel tax rates will have to rise in locations where wildfires are a risk, and especially for specific properties that aren't fire safe. It may be prudent not to offer any insurance for properties that aren't fire safe.

California Has Always Had Fires that PG&E Didn't Start

Not only did PG&E apparently not start the Tubbs Fire but it also didn't start the Carr Fire in Shasta County, which apparently began with trailer chains dragging on Highway 299.

In fact, California ignited its own fires for thousands of years before it was California and before Europeans came with electricity and trailer chains. So the initiation of fires is not new.

What is new, firefighters tell us, is that fires are much worse now than in previous decades. The difference is the extended effect of parched wild lands, higher temperatures, and stronger winds, all the results of climate change.

It's unlikely that climate damage will suddenly go away. Already in 2019 we're seeing flood losses, and more victims. Therefore, a successful resolution to climate damage should reduce fossil fuel pollution as well as compensate victims.

I Should Pay for the Climate Damage I Cause

Who's responsible for climate change? Truth be told, I am. And so is everyone who contributes carbon dioxide to the atmosphere by burning fossil fuel. Thus, a fairer way to compensate climate change victims is to charge all us fossil fuel burners some amount of damage cost.

How much might costs change at the gasoline pump with the CARB Climate Damage Fund? ignoring other greenhouse gases for purposes of illustration, California emitted about 359 million tonnes of carbon dioxide in 2016; if 2017 emissions are the about same and total damages (the sum of column 6) turn out to be $14 billion—as PG&E predicted its liabilities might be on

March 1—then each tonne causes about $39 of damage. That translates to about 33 cents per gallon of gasoline, perhaps a 10 per cent increase above current prices.

We see variations like that at the gas pump all the time, so such an increase shouldn't be a terrible shock. Fossil fueled electricity prices would rise too, so we'd all be encouraged to use more solar, and use solar to power our electric cars.

If damages continue as they have in 2017 and 2018, the proposed CARB Climate Damage Fund would have to grow year on year, and fuel prices will have to rise substantially.

California as World Leader

Climate change is a worldwide phenomenon and some will say that we shouldn't do much about it unless the rest of the world does too. I reject that idea, because no place in the world is better positioned to make a real difference than California. We have the technology, the wealth, the regulatory structure and the public will to lead the rest of the world. We'll be healthier, too. California can continue to set an example for the world and for the rest of the United States, especially given the current need to reboot federal climate policies.

Massive political opposition arises whenever California tries to "raise taxes," or any other fees. Californians' freedom to drive as much as they want in vehicles as large as they want will be under threat, and there will be opposition to that loss of freedom.

Framing this solution properly may help. This policy will compensate genuine victims of fires (and floods, etc.) without raising real taxes. SUV drivers may disagree, but charging more for fossil fuel now will be the least cost strategy over the long run. And people like me who over time have been responsible for climate change could avoid CARB's fee increases by using solar and electric cars.

Legislatively it appears to me that a modification of SB901 will be necessary, at least to change the non-bypassable feature. Perhaps a modification of the legislation implementing CARB's cap and trade is necessary as well, although it may be that amendments could be sufficient. These modifications are easier said than done, but I believe that for all our grandchildren's sakes they must be done promptly.