Wildfire Impacts on the Electricity Sector

Impact of Wildfires on the Electricity Sector

Wildfires are significantly affecting California's residents, landscape, air quality, and electricity. These fires have severely threatened or damaged clean energy facilities, affecting resource operations and availability. They have emitted substantial quantities of greenhouse gases that undermine the gains that we have made to reduce these emissions throughout our economy. Action is needed to initiate proactive policies and secure the funding needed to prevent the continuation of these fires.

Wildfires Threaten the State's GHG and RPS Goals

For more than a century, the state and the federal government have focused on fire suppression policies that have resulted in dangerously high fuel accumulations in much of the state's forests. Forests that may have normally hosted 50-60 trees per acre can now average 350 trees per acre or more. These forest conditions are unnatural, and when combined with prolonged periods of drought and bark beetle infestation, substantially increase the risk of catastrophic wildfires and complicate response efforts.

Unfortunately, fires also pose a major threat to the state's renewable energy infrastructure. A significant amount of the state's greenhouse gas-free hydroelectric power and eligible Renewables Portfolio Standard (RPS) geothermal energy is generated in "very high fire hazard severity zones" according to CAL FIRE. As the state experiences more frequent, catastrophic wildfires, it is inevitable that more renewable energy will be lost and replaced with spot market purchases, which predominately consist of energy from fossil-fueled power plants (this was the case when NCPA lost carbon-free generation due to the Valley Fire and Butte Fire). These types of impacts, if not addressed, will hinder efforts by the state to realize its ambitious 2030 greenhouse gas (GHG) reduction and RPS goals.

Further, wildfires produce hundreds of thousands of fire-ravaged acres of runoff each year, with the sediment from the fires finding their way into the various reservoirs that make up California's extensive system of hydroelectric resources. This can reduce hydroelectric generating capacity that provides critical operational flexibility to a grid that is increasingly more reliant on intermittent renewable resources.

Wildfires Thwart Climate Efforts

The 2015 Valley, Butte, Jerusalem, and Rocky fires directly affected NCPA members. These fires burned a combined 241,491 acres of land, approximately equal to the amount of land burned by the Rim Fire in 2013 (the fourth largest wildfire in California history). Initial estimates indicate that the Rim Fire released 11,352,608 metric tons of GHG emissions, about a fifth of the GHG emissions limit that will be required of the entire power sector by CARB in 2030 for the entire year. Based on the US EPA's web site, those emissions are roughly equivalent to the following:

- Annual greenhouse gas emissions from 2.3 million cars
- Carbon dioxide emissions from 1.2 billion gallons of gas consumed

- Carbon dioxide emissions from the electricity use of 1.5 million homes for one year
- Annual carbon dioxide emissions of 3.2 coal fired power plants

In 2017, California experienced both the largest (Thomas Fire) and the most destructive (Tubbs Fire) in the state's history. Over 1.2 million acres of land were burned, thousands of structures destroyed, and many lives lost. As the frequency and destructiveness of wildfires continues, it is critical that proactive measures be implemented to mitigate against wildfire risks as much as possible. These fires compromise the significant efforts and resources that the electric industry and the economy as a whole have put into reducing GHG emissions in the state.

Wildfires and Black Carbon

Short-lived climate pollutants, such as black carbon, are powerful climate forcers and dangerous air pollutants that remain in the atmosphere for a much shorter period of time than longer-lived climate pollutants, such as CO^2.

Black carbon emitting resources include wildfire, fuel combustion in the industrial and power sector, fire places and wood stoves, off-road mobile, and on-road diesel vehicles. Among these, wildfire is by far the largest source of black carbon emissions in California. An average wildfire season contributes two-thirds of current black carbon emissions in the state.

The California Air Resources Board's (CARB) *Short-Lived Climate Pollutant Reduction Strategy* (SLCP Plan) establishes targets to reduce black carbon emissions by 50 percent below current levels by 2030. This target, however, purposely excludes reductions in black carbon from wildfires. Without considering wildfires in CARB's strategy, the 50 percent target becomes arbitrary and places a disproportionate burden on the energy sector, which is already making great strides in reducing overall carbon emissions. It also fails to appropriately recognize the significant greenhouse gas emissions caused by catastrophic wildfires, and as a result, unduly downplays the serious urgency surrounding the need for action and funding to prevent wildfires. CARB should focus on this issue in future updates to the SLCP Plan and Scoping Plan.

The Need for More Action

With the threat wildfires pose on the electricity system in California, NCPA supports state policies that protect electricity infrastructure and renewable power plants that provide clean energy and maintain system reliability for Californians.

Policies, including state funding for fuel treatment and biomass energy projects, will help reduce the risk of fires that negatively impact the energy sector. NCPA specifically supports increased allocations from the Greenhouse Gas Reduction Fund to support forest management, and looks forward to monitoring progress on Governor Brown's soon-to-be-formed task force studying this issue.

Effective forest management, fuel treatment, and biomass energy policies could, if designed appropriately, improve forest health, help reduce short-lived climate pollutants associated with wildfires, support the development of the biomass industry, and protect other critical infrastructure in the state.