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Comments: Climate change comments applicable to the three draft EAs (North Zone, Central Sierra Zone, and Southern Sierra Zone) are submitted in the attached .pdf.

Subject : Climate Change Comments on Region 5 Post-Disturbance Hazardous Tree Management - Draft Environmental Assessment And Finding of No Significant Impact These comments apply to the three draft EAs (North Zone, Central Sierra Zone, and Southern Sierra Zone), but the comments will refer to the draft EA for the North Zone as an example and to reference page numbers. The draft EA identifies Climate Change as one of the Issue Analyzed in Detail (p. 25): Climate Change [ndash] Logging, piling, burning, hauling and transportation would result in greenhouse gas emissions that contribute to climate change. The draft EAs have major deficiencies in assessing effects on climate change that need to be remedied. The following comments are by draft EA sections and include recommendations for updated analyses and revisions. Potentially Affected Environment: Climate Change - Fossil Fuel for Fighting Wildfires The Potentially Affected Environment for climate change mainly discusses fluctuations in climate such as drought, but has only a brief statement regarding the issue of greenhouse gas emissions (p. 22-23): Across the greater project area (North, Central Sierra, and Southern Sierra Zones), the primary factors related to climate change include the effects of greenhouse gas emissions in wildland fire smoke to climate and the effects of climate change to forest ecosystems. The 21 recent wildfires produced large amounts of greenhouse gases. The Potentially Affected Environment mentions only wildland fire smoke as a source of greenhouse gases, such as from the 21 recent wildfires. However, fossil fuels used by the Forest Service (and other agencies) to fight wildfires such as the 21 recent wildfires are also a source of greenhouse gases. Fighting wildfires is a fossil-fuel dependent activity (chainsaws, planes, helicopters, crew buses, fire trucks, dozers, etc.). The mobilization to staff the fire fighting organizations for the 21 recent wildfires brought thousands of people from across California and across the U.S. by car, bus, and planes. At each wildfire site, crews were transported to and from the wildfire, some on a daily basis. The amount of fossil fuel used in Forest Service firefighting is a result of the choices made by the Forest Service in firefighting strategies and tactics as well as how the fire organization 1 (personnel and equipment) is structured and mobilized. It is especially important to address the fossil fuel sources of greenhouse gas emissions in the draft EA because the Forest Service use of fossil fuels is a direct cause of greenhouse gas emissions, and because the Forest Service is responsible for the quantities of fossil fuels used in fighting wildfires and in prescribed burns. The U.S. Environmental Protection Agency states the overarching role of fossil fuels in greenhouse gas emissions: Greenhouse gases trap heat and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years.<sup>1</sup> The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> There are important differences between CO<sub>2</sub> emissions from forests (biogenic carbon) and CO<sub>2</sub> emissions from fossil fuel (geologic carbon). Forests or biomass emit carbon that is part of the biogenic carbon cycle. In contrast, fossil fuels release geologic carbon that has been locked up deep in the Earth for millions of years. The International Energy Agency explains: In other words, fossil fuel use increases the total amount of carbon in the biosphere-atmosphere system while bioenergy systems operate within this system; biomass combustion simply returns to the atmosphere the carbon that was absorbed as the plants grew. IEA Bioenergy, 2021, Fossil vs biogenic CO<sub>2</sub> emissions, International Energy Agency (IEA) website. Fossil vs biogenic CO<sub>2</sub> emissions | Bioenergy (ieabioenergy.com) Another difference between fossil fuel (geologic carbon) and forests (biogenic carbon) is the degree of confidence in predicting carbon emissions of proposed actions. That there would be CO<sub>2</sub> emissions from fossil fuels required to implement the proposed action is certain. Consumption of fossil fuels is unequivocally a source of greenhouse gas emissions. In contrast, the complexity of the forest biomass often leads to debate over whether or to what degree a proposed action would be a carbon sink and/or a source of carbon and greenhouse gas emissions. Another difference is in relation to cumulative effects on climate. The CO<sub>2</sub> and

carbon emissions due to fossil fuels consumed for past timber harvest, prescribed burns, wildland firefighting, recreational visitor vehicle use, and other activities in the project area have accumulated in the atmosphere and will persist for hundreds of years or longer. The CO<sub>2</sub> and carbon emissions from forest biomass sources also persist in the atmosphere, but forests or biomass emission of carbon 2 is part of the biogenic carbon cycle. In contrast, CO<sub>2</sub> and carbon emissions due to fossil fuels are distinctly additive and cumulative in ways that are different from fluctuations in the biogenic cycle. Recommendation - Update the Potentially Affected Environment for climate change to disclose: 1) the significant difference to climate change of greenhouse gas emissions from fossil fuels (geologic carbon) compared with biomass (biogenic carbon), 2) the pervasive use of fossil fuels in fighting wildfires including the 21 recent wildfires and the resulting greenhouse gas emissions. Potentially Affected Environment: Climate Change - Fossil Fuel Consumption in Project Area Pre-Wildfire and Post-Wildfire

The 21 recent wildfires have reduced or eliminated various activities such as recreational use and timber harvest in the project area. As a result, the fossil fuel use and greenhouse gas (GHG) emissions associated with pre-wildfire activities has been reduced, at least temporarily. The proposed action is intended to remove hazardous trees and to resume pre-wildfire activities. As a result, the proposed action would increase the fossil fuel use and greenhouse gas emissions from the current reduced levels of fossil fuel use in the post-wildfire condition. In order to assess the proposed action's potential impacts on fossil fuel use and greenhouse gas emissions, the Potentially Affected Environment for climate change needs to disclose pre-wildfire fossil use (and associated GHG emissions) and post-wildfire fossil use (and associated GHG emissions) in the project area as part of the existing condition. Recommendation - Update the Potentially Affected Environment for climate change to disclose the estimated quantities of pre-wildfire fossil use/GHG emissions and post-wildfire fossil use/GHG emissions for all activities (timber harvest, visitor vehicle use, prescribed burns, etc.) in the project area. Environmental Impacts related to Climate Change Issue Climate Change Effects from the Proposed Action The draft EA section on Climate Change Effects from the Proposed Action states: [ldquo]The primary effect of the proposed action to climate change would be greenhouse gases produced from burning slash piles.[rdquo] (p.46) The draft EA also states: Equipment use over the project implementation timeframe would include dozens of gasoline- or diesel fuel powered vehicles and specialized tree harvesting, processing equipment and transportation trucks on any given day, spread out over the nine national forests of the greater project area. Similar to other hazard tree operations, treatments per 3 day would include 0.5 mile to several miles of road and a varying number of facilities and infrastructure. Therefore, compared to prescribed burning emissions, the emissions the equipment would produce would be minor. The draft EA needs quantitative data, GHG estimates and more explanation to justify the statement that fossil fuel emissions would be minor compared with prescribed burning emissions. But more relevant to the effects analysis than a comparison of daily emissions, this section needs quantitative estimates of total GHG emissions for fossil fuel use and slash burning for the proposed action. Moreover, this draft EA section is incomplete and misleading. The EA needs to recognize that fossil fuel GHG emissions have a unique role and significance in causing climate change effects[hellip] that biomass GHG emissions do not have. There are important differences between CO<sub>2</sub> emissions from forests (biogenic carbon) and CO<sub>2</sub> emissions from fossil fuel (geologic carbon). Forests or biomass emit carbon that is part of the biogenic carbon cycle. In contrast, fossil fuels release geologic carbon that has been locked up deep in the Earth for millions of years. The International Energy Agency explains: In other words, fossil fuel use increases the total amount of carbon in the biosphere-atmosphere system while bioenergy systems operate within this system; biomass combustion simply returns to the atmosphere the carbon that was absorbed as the plants grew. IEA Bioenergy, 2021, Fossil vs biogenic CO<sub>2</sub> emissions, International Energy Agency (IEA) website. Fossil vs biogenic CO<sub>2</sub> emissions | Bioenergy (ieabioenergy.com) CO<sub>2</sub> and carbon emissions due to fossil fuels are distinctly additive and cumulative in ways that are different from fluctuations in the biogenic cycle. The U.S. Environmental Protection Agency states the overarching role of fossil fuels in greenhouse gas emissions: Greenhouse gases trap heat and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years.<sup>1</sup> The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation.

<https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> 4 The crux and main driver of GHG emissions on climate change is the year-after-year release and accumulation of fossil fuel GHG emissions in the atmosphere. The EA needs a substantive, quantitative and hard look at the proposed action's fossil fuel

use and effects on GHG emissions during and after project implementation. The proposed action would use fossil fuels (diesel, gasoline, oil) throughout the months and years of proposed operations: tree felling, delimiting, bucking into logs; slash lopping, piling, chipping, masticating, burning, or removing from site; log landing construction; skidding or yarding to log landing; log landing operations; log trucks hauling to and from mills; transport of construction and logging crews to and from project area; service vehicles for supplies (such as fuel), maintenance and repairs of equipment; truck haul of non-commercial biomass; truck use for dust abatement such as: applying water or other dust inhibitors to roads; road maintenance including cleaning culverts, ditches, and drains, and grading road surfaces and reestablishing rolling dips or other drainage features of the roadbeds on haul routes within the project area; storm damage repairs of road cut-slope and fill-slope failures and stream crossing damages; mobilization and demobilization of logging, construction, and road maintenance equipment; Forest Service vehicles use for pre-timber sale work (timber cruising, layout, marking, etc.); Forest Service vehicles use during administration of timber sales and other project work, Forest Service and contractors vehicles use for Knutson-Vandenberg reforestation and other K-V activities; Forest Service vehicles use to accomplish the Design Features (Appx B has 18 pages of Design Features) . Recommendation - Provide estimates of the proposed action effects on GHG emissions during project implementation: 1) estimate the quantity (gallons) of fossil fuel required to implement the proposed action, 2) estimate the quantity of GHG emissions based on the estimated gallons of fossil fuel use. 3) recognize that fossil fuel GHG emissions have a unique role and significance in causing climate change effects. The EA also needs to assess the proposed action effects on GHG emissions after project implementation. The 21 recent wildfires have, at least temporarily, reduced or eliminated various activities such as recreational use and timber harvest in the project area. As a result, the fossil fuel use and greenhouse gas (GHG) emissions associated with pre-wildfire activities now is reduced.. The proposed action is intended to remove hazardous trees and to resume pre-wildfire activities. As a result, the proposed action would increase the fossil fuel use and greenhouse gas emissions from the current reduced levels of fossil fuel use in the post-wildfire condition. In order to assess the proposed action's potential impacts on fossil fuel use and greenhouse gas emissions after project implementation, the Potentially Affected Environment for climate change needs to disclose pre-wildfire fossil use (and associated GHG emissions) and post-wildfire fossil use (and associated GHG emissions) currently in the project area. Then, this EA section needs to provide an estimate of the proposed action effects on GHG emissions after project implementation: Recommendation - Provide estimates of the proposed action effects on GHG emissions after project implementation: 1) estimate the quantity (gallons) of fossil fuel use that would be caused by resuming pre-wildfire level of management activities (recreation, timber harvest, prescribed burning, etc.). Provide the estimate of fossil fuel use over a time period consistent with known Forest Service strategic plans, such as, Secretary Vilsack Announces New 10 Year Strategy to Confront the Wildfire Crisis: Agriculture Secretary Tom Vilsack and Forest Service Chief Randy Moore will today launch a comprehensive response to the nation's growing wildfire crisis [ndash] [ldquo]Confronting the Wildfire Crisis: A Strategy for Protecting Communities and Improving Resilience in America's Forests.[rdquo] The strategy outlines the need to significantly increase fuels and forest health treatments to address the escalating crisis of wildfire danger that threatens millions of acres and numerous communities across the United States. <https://www.usda.gov/media/press-releases/2022/01/18/secretary-vilsack-announces-new-10-year-strategy-confront-wildfire> Cumulative Effects on Climate Change The draft EA section for Cumulative Effects on Climate Change consists of this one paragraph: This project, in combination with current and future proposed fuels projects and continued interagency collaborative efforts to address fuels, could reduce the risk of recurring damaging wildfires in the future. Frequent prescribed fire and other fuels reduction and ecosystem maintenance treatments in and around the project area would cumulatively move the areas toward meeting desired conditions for fuels and greenhouse gas emissions. 6 The draft EA paragraph on cumulative effects on greenhouse gas (GHG) emissions does not begin to meet even the most rudimentary compliance with NEPA regulation requirement to assess cumulative impact ((40 CFR 1508.7) Cumulative impact. Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The draft EA [ldquo]section[rdquo] (paragraph) on cumulative effects on GHG emissions needs major overhaul, and basically needs to start over and begin the

analysis process with instructions and examples on how to comply with NEPA regulation for assessing cumulative impacts. The second major deficiency of the draft EA section on cumulative effects is the failure to include (or even mention) GHG emissions from fossil fuels. Fossil fuel use is required to implement the [Idquo]Frequent prescribed fire and other fuels reduction and ecosystem maintenance treatments in and around the project area[hellip][rdquo]. Fossil fuel use is required for fighting wildfires in and around the project area. Fossil fuel use is required for a wide range of other National Forest activities in and around the project area (timber harvest, visitor vehicle use, road maintenance, storm damage repairs, aquatic organism passage construction, campground and trail maintenance, etc.). CO2 and carbon emissions due to fossil fuels are distinctly additive and cumulative in ways that are different from fluctuations in the biogenic cycle. The EA needs to recognize that fossil fuel GHG emissions have a unique role and significance in causing cumulative effects on climate change [hellip] that biomass GHG emissions do not have. There are important differences between CO2 emissions from forests (biogenic carbon) and CO2 emissions from fossil fuel (geologic carbon). Forests or biomass emit carbon that is part of the biogenic carbon cycle. In contrast, fossil fuels release geologic carbon that has been locked up deep in the Earth for millions of years. The International Energy Agency explains: In other words, fossil fuel use increases the total amount of carbon in the biosphere-atmosphere system while bioenergy systems operate within this system; biomass combustion simply returns to the atmosphere the carbon that was absorbed as the plants grew. IEA Bioenergy, 2021, Fossil vs biogenic CO2 emissions, International Energy Agency (IEA) website. Fossil vs biogenic CO2 emissions | Bioenergy (ieabioenergy.com) 7 The U.S. Environmental Protection Agency states the overarching role of fossil fuels in greenhouse gas emissions: Greenhouse gases trap heat and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years.<sup>1</sup> The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> The crux and main driver of GHG emissions effects on climate change is the year-after-year release and accumulation of fossil fuel GHG emissions in the atmosphere. The EA needs a substantive, quantitative and hard look at the cumulative effects of fossil fuel use on GHG emissions. Recommendation - Update the cumulative effects for biogenic GHG emissions. Estimate the quantity of forest (biogenic carbon) GHG emissions from past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Recommendation - Update the cumulative effects for fossil fuel (geologic carbon) GHG emissions. Estimate the quantity of fossil fuel (geologic carbon) GHG emissions from past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Consistency with NFMA and Other Law, Regulation, and Policy Recommendation - Evaluate whether the effects of the proposed action on fossil fuel GHG emissions is consistent with the National Forest Management Act (NFMA) [ndash] Land Management Plan Consistency and with Other Law, Regulation, and Policy Consistency such as E.O. 12898, Environmental Justice. FONSI or EIS Recommendation - Evaluate whether the effects of the proposed action on fossil fuel GHG emissions would have a significant effect on the human environment, and thus, an environmental impact statement would be prepared.